External Review of the IDRC Climate Change and Water Program

Final Report

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List of Acronyms

AARC – African Adaptation Research Centres
ALF – Annual learning forum
AFS – Agriculture and Food Security (IDRC Program)
ARI-Asia – Adaptation Research Initiative in Asia
ARI-LAC – Adaptation Research Initiative in Latin America and the Caribbean
CARIAA – Collaborative Adaptation Research Initiative in Africa and Asia
CCAA – Climate Change Adaptation in Africa (IDRC Program, co-funded with the UK's Department for International Development, DFID)
CCW – Climate Change and Water
EC – Environment Canada
ER – External review
FPR – Final prospectus report
FS – Fast Start
GIS – Geographic information systems
ICLEI – International Council for Local Environmental Initiatives (Local Governments for Sustainability)
ICTs – Information and communications technologies
IPCC – Intergovernmental Panel on Climate Change
IWRA – International Water Resources Association
LDC – Least developed country
NAPA – National Adaptation Programme of Action
OA – Outcome area
PAD – Project approval document
PCR – Project completion report
PMR – Project monitoring report
PO – Program officer
PSED – Policy, Strategy and Evaluation Division
RP – Research project
RPE – Rural Poverty and Environment (IDRC Program)
RSP – Research support project
RQ+ - Research Quality + (IDRC Framework)
TORs – Terms of reference
UCCRN – Urban Climate Change Research Network
UNFCCC – United Nations Framework Convention on Climate Change
UPE – Urban Poverty and Environment (IDRC Program)

Introduction

This external review of the Climate Change and Water program is designed to provide feedback for accountability purposes to IDRC's Board of Governors and to senior management for the implementation of the program prospectus and delivery of program results. The external review panel commenced its work in June 2014, and was asked by the Policy, Strategy and Evaluation Division (PSED) to address four questions:

- Q1 - How did the program perform in implementing its prospectus?
- Q2 - Overall, was the quality of research supported by the program acceptable?
- Q3 - To what extent are program outcomes relevant and significant?
- Q4 - What are key issues for IDRC's Board of Governors and senior management?

In undertaking this review it became clear to the panel that although our task had been presented as an assessment of a new five-year program, we found that the program was responsible for a portfolio that evolved over time in a continuing process. When the CCW prospectus was approved, it already had a portfolio of 25 ongoing projects inherited from predecessor programs, to which it soon added 15 more from CCAA. Even before approval, program officers were asked to explore projects with a climate adaptation element, given the long lead times in project development. Now in the final year of its five-year mandate, CCW is already looking ahead to future transitions[1]. While it may be obvious within IDRC, the panel found it helpful to make this program evolution more explicit, rather than to try to represent the program's portfolio as a discrete five-year chunk. Many program outcomes will not be manifest until years after its five-year mandate. For an external review, this means that evidence of the program's achievements must reflect it as still a work in progress.

The panel found the notion of innovation "trajectory" to be useful in illustrating various observations. By this we mean the learning process whereby innovations go through multiple iterations of development, adaptation, re-design, rejection and acceptance. Research programs using the notion of innovation trajectory connect their work to previous scientific research and strategically position their findings for future application. Innovation trajectories typically extend beyond the time frame of individual projects.

Methodology and Project Sampling

The methodology employed by the External Review Panel closely follows the direction provided by IDRC[2] and is described in the panel's workplan (Annex 1). The principal data sources for the panel's assessment were documentary and included (1) program-level internal documentation such as the prospectus and final prospectus report (FPR), team meeting documents and annual reports; (2) project-level internal documentation such as the PAD, PCR, PMRs, and similar staff-generated documents; and (3) project-level external documentation generated by recipients (interim and final technical reports, products, publications) and other experts (external project evaluations). We list the key sources we consulted in Annex 2. Each of the three main review questions had somewhat different data requirements, but in all cases the documentary review was supplemented and sharpened through interviews with IDRC program staff in Ottawa and the regions, which particularly helped with identification and clarification of some of the documentary sources. See a full list of interviewees in Annex 3. For validation and triangulation, the panel also undertook a short, focused on-line survey of 84 external recipients, using Survey Monkey.

Project sampling for Q1 focused solely on projects approved since the prospectus and included research projects, RSPs and awards. A total of 20 projects were sampled for document review, including five that overlapped with the Q2 sample and five that overlapped with the Q3 sample, with the remainder chosen at random.

Project sampling for Q2 underwent adjustment during the review process to take better account of program evolution. All three panel members participated in the research quality assessment to gain familiarity with the origins, objectives, implementation and performance of sample projects, and to develop a shared interpretation of IDRC's new RQ+ Framework in its first programmatic application. This effort led to a refinement of PSED's recommended sampling criteria for RQ+, because the panel could find no research projects started after formal prospectus approval that had been closed by the time we undertook our sampling. The only closed projects in the portfolio were legacy projects started under precursor programs. With PSED agreement, the panel elected to sample as many research projects as possible that had been started under the new prospectus and were substantively completed, if not yet closed. We found 10 projects that met these criteria, to which we added another 15 projects sampled from amongst the legacy portfolio, bringing the total Q2 sample to 25 (about 30% of the total of 81 research projects). This sample was checked against regional allocation, program themes and project size distribution for the entire portfolio to ensure reasonable representation in relation to these criteria.

Project sampling for Q3 was intended first to validate FPR conclusions, so preliminary review focused on the projects highlighted therein. In addition, a further 19 projects were selected for detailed review from among those approved prior to 2013. This sample partially overlapped (15) with Q1 and Q2 samples. Information from sampled projects was triangulated with information from other sources. A list of projects sampled in all three questions is presented as Annex 4.

Programming Operational Background: Context, Risk, Expectations

At the outset, CCW benefitted from the Centre's experience with CCAA, which generated profile in this new field and created an opening for IDRC to engage positively on climate adaptation and vulnerability. The field of climate adaptation research has been very active over the past decade, although capacity remains limited in low-income countries. The topic is of widespread international interest, but conceptual frameworks have been contested and are rapidly evolving. With large amounts of funding earmarked in the UNFCCC process for adaptation in poor countries, the topic is also politically charged. Both recipient and donor countries want to distinguish "additionality" of adaptation investments over regular development assistance, and need to understand adaptation mechanisms to manage fund allocation. These contextual factors created expectations for the new program in terms of capacity building and potential policy influence.

At the same time, policy influence targets are not obvious. Few jurisdictions have national climate adaptation policy frameworks. Many LDCs have formal National Adaptation Programmes of Action (NAPA), but these are of limited salience for implementation, which is almost inevitably local (i.e. from the level of farmers' fields up to perhaps a river basin scale). So with few standard methodologies, limited developing country research capacity in this field, demanding interdisciplinary approaches, and poorly defined policy targets yet high expectations for potential influence, the program was developed and implemented in a challenging and relatively high risk context.

Question 1: How did the program perform in implementing its prospectus?

The program implemented its prospectus in a coherent and consistent way, in the face of a rapidly changing field. Strategy evolution showed few significant shifts, and these were documented and justified in context. The program made reasonable implementation choices and capitalized on opportunities. A weakness in implementation strategy was that valuable program learning could have been better shared amongst staff to strengthen insights from project implementation in the context of evolving understandings of adaptation and vulnerability.

CCW Program Strategy

The program's strategy focused on climate change, water availability, adaptive capacity, and the identification and implementation of practical adaptation measures. Building on existing projects and partners, it emphasized interdisciplinary approaches that integrate climate science and hydrology with social and economic analysis, including vulnerability assessment, gender and diversity analysis, participatory GIS, and economic analysis. The program articulated three outcome areas (OA) expressed slightly differently in different documents (see Annex 8): OA1 - research to increase availability of water and enable adaptation; OA2 - capacity building for researchers and research institutions; and OA3 - communication of results and policy influence. The panel found at least two versions of the program's Theory of Change (one in a graphic prepared for ALF1 and another in a matrix as an annex to the FPR). While these documents explain the logic of the three OA, they do not appear to have guided program evolution or management strategy.

In general, these elements of the CCW program strategy were implemented consistently. The program evolved in response to opportunities and experience. There were few significant shifts in strategy, and these were clearly justified. Programmatic themes served a descriptive rather than strategic function and were re-defined several times to better reflect ways to group the portfolio, particularly to support interaction and shared learning among similar projects. On the other hand, the three OA defined in the prospectus have been robust and provided the key strategic elements to guide proposal development and program evolution. They have framed the program monitoring and evaluation strategy, annual learning forum discussions and the FPR, and are clearly reflected in all sampled PADs and in efforts to leverage external funds. Program evolution is tracked in a timeline shown in Annex 5.

Exploratory programming

The CCW program undertook two exploratory programming activities: one on water, energy and climate as an emerging field of interest, and one on ICTs for water management and climate adaptation. In both cases, a strategic decision was made **not** to expand programming effort in these domains[3].

Proposal calls

CCW committed roughly 30% of its funding through proposal calls, the strategies for which evolved. The initial competitive call for coastal adaptation research generated over 300 submissions, of which only five could be funded, but it helped to identify potential new partners. The review and assessment process was time-consuming so for the "Fast Start I" call (AARC), where disbursement was time-constrained, the team opted for a closed (invitational) call and larger, more comprehensive projects, inviting 18 institutions already known to IDRC in Africa to submit proposals of which seven were funded. "Fast Start II" (ARI-Asia and -LAC) was also structured as a closed call, but with even more specific TORs, and directed to conventional research and student capacity building rather than institution building[4]. Another variation

was a research call within a project[5], particularly where the processes of review and administration offer capacity and/or learning opportunities directly relevant to project objectives. Lessons that the program has already drawn from these diverse experiences[6] should be supplemented by comparative results from the projects as they are completed, and shared more widely within the Centre in order to strengthen the effectiveness of future proposal calls in other programs as well.

Program learning

Learning processes are central to research for development (R4D) programs. The CCW program was conscious of its experimental and exploratory nature, but missed opportunities for systematic shared learning amongst program staff. Attention was paid at the outset to developing a comprehensive M&E framework, whose objectives included "to ensure that learning takes place at the project and program level and to integrate lessons learned and manage risks as they arise….".[7] The panel recognizes the comprehensive nature of this monitoring framework and related documentation but found that it was used primarily for reporting purposes rather than formative evaluation.

Team learning and critical reflection about project experiences mostly took place through the PCRs prepared by individual POs. These were shared with management but lessons were not readily synthesized for the benefit of program staff except in periodic reviews by program research awardees. Some PMRs and PCRs raised concerns and challenges with project implementation that were not always resolved.[8] The knowledge and experience acquired from individual projects did not seem to be well connected to programmatic learning processes. The ALF was a more inclusive shared learning mechanism, but only for the first two years of the program, when many of the projects still pre-dated CCW. By year three, ALF discussions focused primarily on generating results for reporting in the FPR.[9] ALF discussions focused mainly on learning from selected successes rather than from failure, although the program did take measures to adjust review criteria in response to poor project performance.[10]

There were many learning processes supported by CCW, including project-specific learning by individual POs as documented in PMRs and PCRs, and shared learning among project research teams in closely related fields (e.g. coastal research). The challenge identified by the panel is that, while there was lots of learning going on, there was limited evidence of the program systematically sharing and reflecting on these lessons in order to refine their collective research strategies and accelerate innovation.

One notable counter-example of effective programmatic learning was CCW's deliberate shift away from adaptive capacity as a key unifying prospectus theme and object of inquiry. Discussions at ALF2 concluded that it was not a useful concept to distinguish significant and meaningful results.[11] However, one of the results of this decision was that some of the institutional aspects of adaptive capacity may have been neglected.[12] Aside from this example of program learning, FPR conclusions and programmatic lessons provide limited insight. There is limited evidence of "…quality lessons that emerge from a deep reflection on the program experience".[13]

Prospectus Implementation

Overall implementation has displayed a balance of consistency and persistence with flexibility and evolution. The transition was managed reasonably between the legacy portfolio (mostly UPE and RPE projects, some of which had little to do with climate change) and a new set of projects responding more specifically to CCW objectives. The effort to identify selected projects with greater relevance for CCW from amongst those developed prior to approval of the prospectus generated a handful of projects that became central to CCW's work.[14] As planned, the team collaborated with other programs (especially AFS) to implement projects in overlapping domains.[15]

Fast Start I and II

The Canadian government committed significant new resources to support the UNFCCC "Fast Start" adaptation fund established at COP15 in Copenhagen in December 2009. IDRC was subsequently able to position itself as a strong Canadian implementation partner with Environment Canada as these Fast Start commitments were defined, because its prior experience with CCAA demonstrated both knowledge and capability [16]. However, this also led to some adjustments in CCW program implementation after prospectus approval. FS I was designed to support "Centres of Excellence" in Africa that focused mainly on adaptation in agriculture, building on the partnerships developed through the CCAA program, and this sector had not been identified as a priority in the prospectus. CCW's nimble response in selection of partners, definition of projects and disbursement of funds to meet EC timelines, despite the ongoing challenges of program start-up, demonstrated agility and management skill. The program was able to modify project development processes to move quickly enough to leverage external funding for its programmatic objectives, but also to contribute meaningfully to implementation of a high profile Canadian government policy commitment. As a result, EC remains interested and engaged in longer-term outcomes from the program. IDRC is now regularly included in policy consultations on international climate adaptation issues[17].

Managing risks

Partly in response to this dramatic increase in budget and urgent disbursement timeline, the team chose to package larger projects and direct these to high capacity institutions to reduce the time and risk of proposal development. This skewed overall funds allocation more towards high capacity research organizations than originally intended in the prospectus, but was a coherent and reasonable response to the risks identified. It is clear that the program recognized that this strategy also itself created new program management risks. Special administrative responses were required to help address the recognized communications and organizational challenges of large multi-component projects.[18]

Although the program evolved in a high-risk context, CCW also specified in its prospectus that it would systematically devote a small portion of its resources to innovative high-risk, high-potential projects. The program has done this, and deserves credit for persisting in lengthy approval processes that required careful justification of these risks.[19] In particular, the program has identified the private sector as a crucial adaptation user and potential partner, and is exploring various ways to engage.[20]

Overall Reflections on the CCW Program's Implementation of the Prospectus

The CCW program implemented its prospectus in a coherent and consistent way, in the face of a rapidly changing field. Strategy evolution was good, with few significant shifts, and these documented and justified in context. The program made reasonable implementation choices and capitalized on opportunities, particularly in its nimble response to Fast Start funding from Environment Canada. This built strong relations and profile with that agency, and FS funds were leveraged effectively to support prospectus implementation. Choices in programming and priorities were coherent and sensible. Risk management was appropriate in the face of challenging conditions.

One weakness in implementation strategy was that valuable learning from the project level could have been better utilized to inform program-level strategy. As noted above, the operational context of the program was one of few standard methodologies, limited developing country research capacity in this field, demanding interdisciplinary approaches, and poorly defined policy targets combined with high expectations for potential influence. Under these circumstances, we would have expected project-level experiences to extensively inform program-level learning. Although the program did invest in synthesis,

learning and sharing among projects with common thematic interests, our conclusion is that lessons did not find their way into shared programming insights.

We surmise that program staff made trade-offs in the face of limited time and resources[21]. A relatively short research program lifespan also meant that by the time strategic and substantive lessons were gained, some of them lost relevance because the program was nearing completion and likely to be reconstituted. These factors mitigate against the critical reflection and shared learning that are essential to program effectiveness within a longer-term R4D innovation trajectory.

Question 2: Was the quality of research supported by the program acceptable?

The quality of research supported by the CCW program is good overall. The panel found that the quality of different projects was diverse and widely distributed. Across all sampled projects, we found good performance on elements such as research integrity, originality and relevance and lower performance in relation to responsiveness to gender considerations, timeliness and actionability of research (or positioning for use), and design of research to address potentially negative consequences.

The quality of research was assessed using IDRC's Research Quality Plus (RQ+) Framework[22]. This framework considers important aspects of the research processes related to design, execution and dissemination. The RQ+ framework was developed by PSED after the CCW program had already elaborated its own monitoring and evaluation framework. Sub-dimensions used are consistent with IDRC's expectations of its grantees.[23] RQ+ quality dimensions and sub-dimensions are: (1) *research integrity* (technical quality, appropriateness and rigour of the design and execution of the research); (2) *research legitimacy* (addressing potentially negative consequences and outcomes for research participants and for affected populations including research ethics, gender responsiveness, inclusiveness of vulnerable populations, engagement with local knowledge); (3) *research importance* (originality, relevance); and (4) *positioning for use* (knowledge accessibility and sharing, timeliness and actionability). A visualization of the RQ+ rubric can be found in Annex 6. A summary of the panel's scores for each dimension for each project may be seen in Annex 7.

The quality of research in sampled research projects varied considerably. Most research was relevant for decision-making, addressed well-identified local needs and/or priorities and was highly original, generating new insights and knowledge for theory and practice. Some research was also inclusive of vulnerable populations, targeted research products to specific user groups and was of strong technical quality and rigourous design and execution.

Overall, roughly three-quarters of the projects we reviewed addressed in a satisfactory fashion the IDRC criteria for quality research. The best projects were technically rigourous and relevant for decision-making, generated new insights and knowledge for theory and practice, and addressed well-identified local needs and priorities. Examples include projects 105567 (Enhancing resilience of rural communities to reduce impacts of droughts, floods and frost in the Mantaro Valley, Peru) and 105868 (Sub-Saharan African Cities: A Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action).

About a quarter of sampled projects were of less than acceptable quality. These projects had multiple deficiencies: they may not have been technically rigourous; failed to generate new insights and

knowledge; may have had little relevance for decision-making; and often did not adequately consider vulnerable populations, gender issues, or the potentially negative consequences of outcomes.

There is significant diversity in the quality scores of the projects assessed. Figure 1 uses the RQ+ scoring rubric to show the variation in quality between the various projects in our sample. All new projects fell into the acceptable/good category, while legacy projects were distributed across all four categories.

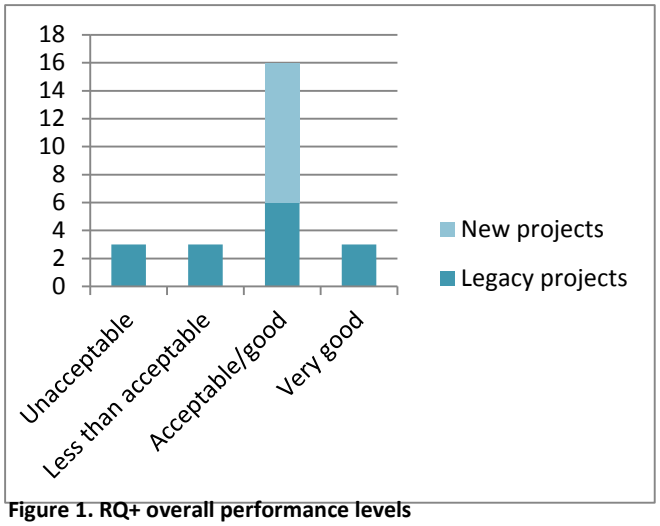

Figure 1. RQ+ overall performance levels

Table 1 shows a ranking of quality dimensions and sub-dimensions for new projects compared to legacy projects. A higher rank indicates a higher score and better performance. Relevance, local knowledge, originality and inclusiveness were ranked high for both new and legacy projects. New projects relative to legacy projects placed greater emphasis on gender responsiveness, timeliness and actionability and on addressing negative consequences. Nonetheless, these were the quality dimensions in which many projects, both new and legacy, were relatively weak.

Table 1. Quality dimensions and sub-dimensions (listed in order of score, from highest to lowest)

Performance level	New projects – quality dimensions	Legacy projects – quality dimensions
Good/acceptable	Relevance	Local knowledge
	Local knowledge	Originality/Relevance
	Research integrity	Inclusiveness
	Originality	Knowledge accessibility
	Inclusiveness	Research integrity
	Knowledge accessibility	Gender responsiveness
	Addressing negative consequences	
	Gender responsiveness/Timeliness and actionability	
Less than acceptable		Timeliness and actionability
		Addressing negative consequences

The FPR recognizes that many researchers in the field of climate change and water have weak capacity in analyses of vulnerability, social and gender equity, and poverty and socio-political exclusion, as well as in the economics of adaptation. It also indicates that the importance of these dimensions has been typically underestimated. The relatively low scores for addressing negative consequences and gender responsiveness suggest that, although POs have identified these deficiencies, they often were not fully addressed in projects apart from those with a specific focus on gender and social issues.[24]

With respect to timeliness and actionability, one reason why certain projects were unable to achieve wider impact at the policy level may be because grantees did not always consider policy change to be an important project component[25]. This suggests that the program might wish to look more closely at partners´ selection criteria and project implementation strategies. Other possible reasons may be due to researcher neglect of innovation trajectories over longer time frames, discussed further in Q3.

Overall, the quality of new projects was more consistent than legacy ones. We explored several plausible explanatory factors for the differences in scores between legacy and new projects, including differences in type of recipient, proposal development process or PO attention to the project, but could not find consistent relationships with any of them. We note that the CCW prospectus emphasized many of the features subsequently included as criteria in the RQ+ framework, particularly research legitimacy and positioning for use factors, so we might expect that projects more closely tied to the new prospectus would also score better on these criteria. We draw no conclusions here about the reason for this difference in quality. The sample size is small, there are many potential influence factors, and the panel's assignment emphasizes that we are to assess the entire portfolio. But we recognize the higher quality and greater consistency of the newer projects is a positive finding.

We assessed key influences that have significant potential to affect the quality of research for development. These include access to data, research and political environments, maturity of the research fields and the relative emphasis on capacity strengthening (financial and technical support). As per the RQ+ framework, we characterized each sample project for key influences (see RQ+ rubric in Appendix 6). Scores for each influence factor were then compared against overall project performance. Our analysis suggests that none of key influence factors represented a serious constraint. They were generally lower for new projects than for legacy projects (see Table 2).

Table 2. Contextual factors influencing research quality (listed in order of score, from highest to lowest degree of influence)

Degree of influence	New projects	Legacy projects
Medium		Capacity strengthening
Low	Capacity strengthening	Research environment
	Political environment	Data environment
	Maturity of the research field	Political environment
	Data environment	Maturity of the research field
	Research environment	

Although one might expect research quality to be lower in projects where the main emphasis was capacity strengthening, we found across multiple projects a positive correlation between capacity strengthening and research quality (measured in terms of mean score across all quality dimensions). This might indicate that capacity strengthening is paying off and generates higher quality projects. In the course of the evaluation, it was clear that there are some issues, other than the "key influences" listed above, that are deemed to have had a negative impact on the research quality of the projects that scored low. These include, for example, hastiness in project selection[26] and underutilization of monitoring tools.

The goals of the CCW program are ambitious. It seeks to develop high quality policy-relevant research, while also fostering leadership, and building research capacity (when a considerable amount of capacity building may be first necessary before cutting-edge research is produced), encouraging the collaboration of different research institutions across disciplines and geographical regions, building strategic alliances for dissemination and institutionalization of findings and engagement of government institutions at different levels, among other aims. If policy influence is a key objective, it is then necessary to provide learning at the program level in order to enhance project design and implementation.

Question 3: To what extent are program outcomes relevant and significant?

Relevance of CCW projects was high. Most sampled projects either focused directly on climate change and water or used suitable near-term proxies such as seasonal variability. Only a few projects had little discernible relevance to climate change and water. Projects varied in their ability to separate climate change from other external drivers of change.

Significance of outcomes from CCW projects was good and getting better. Although project documentation suggests that relatively few projects showed high payoff from change in policy or practice during the lifetime of the project, many projects demonstrated positive momentum for substantial and growing policy influence over a longer trajectory. Explicit continuity strategies that go beyond the lifespan of individual projects might help maintain this momentum.

We were charged with assessing the relevance and significance of CCW outcomes. Relevance was defined as the extent to which "outcomes that the program achieved are . . . relevant to development and/or research priorities and challenges in the contexts in which the program supports research". Significance was defined as the extent to which "Program outcomes are, or are positioned to be, important contributions to decision-making on policy and practice, taking account of the research field and/or the actors involved, relative to expectations for the program"[27].

Sources of Information

We used four sources of information to verify the relevance and significance of outcomes reported in the FPR: The outcomes database developed by CCW; a detailed document review for a sample of CCW projects; interviews with CCW Program staff; and a survey of external CCW project leaders.

CCW developed a database to monitor project outcomes across three levels of graduated achievement (Annex 9). Outcomes database entries were generally consistent with our review of project documents. To further validate outcomes reported in the FPR, we carried out a detailed review of project documents, especially reports submitted by recipients (Annexes 2, 10 and 11). Because of time limitations, a sample of 19 projects was selected for detailed review. Sampled projects covered all regions and themes.[28] We also conducted interviews with CCW program staff (Annex 3). These interviews helped us to better interpret program outputs and outcomes. Finally, in order to obtain information from external non-CCW sources, we conducted a short survey of 84 project leaders (Annex 12). The aim of this survey was to elicit perceptions on significance of outcomes attributable to CCW projects. The response rate to the survey was 70%.

Outcome Areas

The FPR used five "stories" to report on three "outcome areas" (OA)[29]. Each of the FPR stories has several topic lines and each topic line draws on numerous projects. In this way the FPR touched on the bulk of CCW research projects. We use the following shorthand titles for the three OA:

- OA1 - research to increase availability of water and enable adaptation
- OA2 - capacity building for researchers
- OA3 - communication of results and policy influence.

These OA were portrayed as being independent but we found that at the project level they are functionally linked. Improved understanding of vulnerability (OA1) and improved researcher capacity (OA2) contribute to better information for informing policy (O3). This can facilitate decisions that improve water availability and reduce risk for vulnerable populations (OA1).

In assessing the relevance and significance of OA1 and OA2, we distinguished between intrinsic and instrumental values. Research support and capacity building are valuable in their own right (intrinsic value), though such values are difficult to quantify. Project-level research capacity building (OA2) employed several strategic approaches, including academic awards, collaborative research between northern and southern organizations, and skills development particularly for communication and policy influence. As the program matured, further effort was devoted to synthesis meetings for shared learning among projects. However, most research partners were selected because of a perceived high level of research competence, so research capacity development was highly focused (e.g. on economics of adaptation). The program developed productive strategies to foster leadership and disseminate results in an emerging field by facilitating conference attendance and networking between recipients and leading international research organizations.[30]

Apart from their intrinsic values, research support and capacity building also have instrumental value to the extent that they contribute to decision making on policy and practice (OA3). The following assessments draw together and take account of OA1 and OA2 contributions to OA3 as well as OA3 itself.

Relevance

Relevance of CCW projects was high. Most sampled projects either focused directly on climate change and water or used suitable near-term proxies such as seasonal variability. Only a few projects had little discernible relevance to climate change and water. Projects varied in their ability to separate climate change from other external drivers of change.

Several projects focused squarely on climate change and water, for example, 105515 (Nile Delta coastal zone)[31] which assessed vulnerability and hazards of climate change driven problems of sea level rise, salt intrusion, etc. and developed adaptation strategies. Other projects explored the causes and consequences of drought or flooding events, understanding that the frequency and severity of these events are influenced by climate change. Project 106487 (Indus floods research project) aimed to understand the drivers and consequences of occasional major flooding in that basin. A few projects had little discernible relationship to climate change and water, for example, project 104783 (Land use in the La Plata Basin) where land use changes were found to be driven by market conditions and related policies, and amelioration of soil degradation (unrelated to climate change) focused on zero tillage.

CCW is aware that climate change and improvements in adaptive capacity are long term processes that are difficult to study in a short-term program. For this reason, the program sought to focus on two key questions: "(1) How can immediate short-term threats be reduced within the context of longer-term

climate change? (2) What existing adaptation strategies are both socially and economically feasible, and make for wise longer-term investments?" These are compatible with the program's "no regrets" policy.

This explains why a number of sampled projects focused on near-term seasonal variability as a proxy for longer-term climate change. Examples include 106664 (Semi-arid Kenya) and 106591 (Water management in Indian Punjab). Both projects chose to work on near-term issues because of delays in climate model downscaling. In both cases, research attention reverted to fairly traditional innovations such as crop rotations and water harvesting (Kenya) and groundwater irrigation management (Punjab), about which there has been abundant past research and where a likelihood of a new breakthroughs seems small (reducing the likely significance of research).

Projects varied in their ability to separate climate change from other external drivers of change. For example, the modeling approach used in project 106552 (AARC - Greater Horn of Africa) allowed it to separate out climate change drivers from other drivers. In contrast, project 104554 (Climate Change in the Andes of Bolivia), assessed on-going autonomous strategies for adaptation to changes in water availability but did not fully recognize that such strategies are driven by factors other than climate change, e.g., market opportunities, growth in water demand, demographics, etc. For many projects, it was difficult to determine the extent to which teams incorporated multiple drivers in their analysis.

Significance

Significance of outcomes from CCW projects was good and getting better. Although project documentation suggests that relatively few projects showed high payoff from change in policy in practice during the lifetime of the project, many projects demonstrated positive momentum for substantial and growing policy influence over a longer trajectory. Explicit continuity strategies that go beyond the lifespan of individual projects might help maintain this momentum.

In assessing significance of CCW outcomes, our task was to verify the contributions of the outcomes reported in the FPR, drawing on and triangulating from multiple sources of information and taking account of the complex context within which the program was developed, launched and managed. Our approach was twofold: (1) verify individual project outcome examples and (2) verify overall program outcomes across projects. On the whole, project-level outcomes were reported fairly and accurately. Verification of program outcomes across projects was based on a comparison of information from the FPR vs. information from the project document review, interview findings and survey results.

Our assessment of the significance of outcomes was based on the magnitude and distribution of benefits generated (or anticipated) from policy and practice decisions informed by CCW research. Decisions leading to substantial benefits for many people are more significant than those leading to minor benefits for a few people. Similarly, decisions that benefit vulnerable groups are more significant than decisions that only benefit the well off. For these reasons, we used the following factors to assess significance of an outcome:

- likelihood that an adaptation strategy will be used
- magnitude of benefits from use of an adaptation strategy
- distribution of benefits across different social groups
- scale or spatial incidence of adoption or the number of people affected
- time scale and trajectory of adoption
- movement towards tipping points
- attribution of outcomes to CCW project activities and outputs

From our review of project documentation, we concluded that projects that have generated (or are expected to generate) substantial benefits are the exception not the rule. It was uncommon for any individual project to perform well with regard to all factors. For example, project 105515 (Nile Delta coastal zone) identified adaptation strategies for sea level rise and related problems, but economic analysis found that the economic returns for many of these are likely to be negative ("magnitude of benefits"). In assessing economic returns to adaptation strategies, much depends on the assumptions. Project 106552 (AARC - Greater Horn of Africa) found that adaptation strategies for rain fed cropping systems were likely to be profitable but assumed unrealistic adoption rates for input use and improved soil water management ("likelihood that a strategy will be used"). Economic analysis of adaptation strategies in Pakistan for project 106487 (Indus floods research project) is particularly difficult because of the potential large payoff of adaptation strategies if adopted, the low probability of actual adoption, and the uncertainty regarding the frequency and severity of future flooding events.

The "spatial and temporal coverage" of outcomes tended to be good across projects, many of which incorporated modeling of future consequences of climate change and linked these to spatial models. Given the importance of scale, spatial and temporal dimensions to climate change and water challenges, model development and application were necessarily very important. With regard to "distribution of benefits across different social groups", projects varied in their effectiveness in dealing with gender and equity issues. This was discussed in more detail in the above section on research quality.

Most projects worked consciously towards the development of innovative climate change adaptation strategies. However, a few projects preferred to monitor autonomous adaptation processes, where changes in policy and practice are brought about by other drivers and are independent of research outputs. One example is project 104554 (Climate Change in the Andes of Bolivia) where emerging adaptation strategies for changing water availability are autonomous and are not driven by the strategies and decision support system developed by the project. In such cases, "attribution of outcomes to CCW project activities" is low and outcome significance is reduced.

The ER team conducted interviews with CCW program staff. These interviews, conducted under conditions of confidentiality, helped us to "connect the dots" on program evolution, and to better interpret project outputs and outcomes. Drawing on concrete examples, we learned that progress with decision maker engagement and near-term influence on policy and practice (OA3) is in many cases far more advanced than was reported in the documentation. This is because available documentation for some projects is out-dated or incomplete. The list of staff interviewed is shown in Annex 3.

Survey results showed a relatively high expectation of substantial municipal, regional or national level influence by projects on policy and practice over the next 3-5 years. When asked, "In your opinion, to what extent has information generated by your IDRC-funded project led / will lead to changes in policy and practice by decision makers?" 57% of respondents said that their project has already had a direct or a substantial indirect influence on policy and practice, with over 30% of the target population [defined in the survey] benefiting, and with the unit magnitude of benefits in the "moderate" to "large" range. See Annex 12 for detailed survey results.

Information from staff interviews and project leader surveys caused us to modify conclusions drawn from the document review, increasing our estimate of the significance of CCW outcomes. Although relatively few projects showed high payoff from change in policy in practice during the lifetime of the project, many projects demonstrated positive momentum for substantial and growing policy influence over a longer trajectory.

Continuity Strategies

Because CCW projects deal with complex, long-term issues, with multiple stakeholders, in relatively short-term projects, it seems unlikely that the full value of project contributions will emerge during the course of the CCW program as such. The value generated by outcomes will emerge during the future course of innovation trajectories. The best way to increase the likelihood that past CCW investments will produce future value is to plan for explicit continuity strategies, whereby new champions undertake to carry forward follow-on research, building on the foundation laid by CCW as part of an explicit trajectory. We are not aware that a conscious and systematic effort has been made to construct or develop such continuity strategies. Without them, much of the value of past investments may be lost. For example, in project 106552 (AARC - Greater Horn of Africa), much effort has gone into capacity building in DSSAT and APSIM model validation and use, however it is not clear who will take the lead in carrying on this work to develop and use modeling outputs in future engagement with policymakers.

Continuity strategies can look backwards as well as forwards. For many topics studied by CCW projects, there are substantial antecedent research findings on adaptation strategies and risk management. Projects building on the foundations of antecedent research were typically more relevant, with more significant outcomes. Numerous examples are given in Annex 11 of successes and failures to build on a foundation of antecedent research.

Communications and Influence

Influencing policy or practice, a part of OA3, can help take results to scale. Communication of research results is a necessary but not sufficient condition for policy influence. Peer-reviewed scientific publications, a key objective of the program and an intentional product of many projects, may not themselves be useful for this purpose. The program is aware of these distinctions and of the challenges of policy influence[32] and has put considerable effort into supporting recipients to strengthen their non-academic communications skills.[33]

In some projects, recipients were encouraged to develop explicit "communications and influence strategies" which could be useful tools to make communications more effective.[34] But documented strategies are few in number and of variable quality and there is insufficient evidence to show how they have been executed. Despite the many successful project-level experiences with communications and influence approaches, there seem to have been few examples of synthesized program-level conclusions and guidance from this experience as to which measures were most effective, and in what contexts.

The relationship between scientific outputs and policy was approached in a variety of different ways in program and project documentation. In the coastal portfolio evaluation, it is treated as a trade-off[35], where resources can be directed to either scientific or policy impact but seldom both. In some projects, the relationship is seen as a trajectory: the scientific issues need clear resolution before a policy influence strategy can be determined. Other strategies include early engagement with policymakers; capacity-building (training researchers deficient in either scientific or policy influence skills); careful selection of team membership to include requisite range of skills and contacts; development of new partnerships or networks; or bringing research teams together in synthesis workshops to leverage impacts. Projects that assessed adaptation actions typically found themselves working with local, rather than national, development decision-makers (governments, NGOs, etc.).[36]

An important question is why some projects performed better than others in being positioned for use to influence policy and practice. We conclude the following factors were important in varying degrees:

- Unfavourable policy making environment – was sometimes important. For example, project 105515 (Nile Delta coastal zone) found that policy making in Egypt was paralyzed and that decisions on policy and practice were for the most part not being taken. However, the project did make progress in broadening the general awareness regarding climate change, vulnerabilities to climate change, and the policies needed to implement action plans.
- Authority, mandates and selection of target audiences – may sometimes be a factor but was more difficult to assess. In encouraging policy change, it pays to know who has the authority and mandate for policy development and implementation. Sometimes authority is spread across multiple institutions. At other times, the institution with authority may not be readily accessible to the project. When the project cannot engage with decision makers with the mandate and authority, it must work with "next users" who will continue with policy engagement after the project itself has closed. It was generally difficult to ascertain when a CCW project was or was not engaging with policymakers from the institution with authority and mandate.
- Inadequate engagement with policymakers – including project brevity and a lack of an explicit influence strategy – was usually quite important. As noted above, communications strategies and influence strategies are not identical. Communications strategies are one component of influence strategies. Other components include close engagement with multiple stakeholders, decision maker participation in research design and assessment, recruitment of allies and champions, understanding decision maker needs and circumstances, and similar factors described above. CCW projects often employed suitable communications strategies but they were less likely to develop, use and adapt explicit influence strategies.

Question 4: What are the key issues for IDRC's Board of Governors and senior management?

The panel has identified several interrelated issues for IDRC's Board of Governors and senior management.

Innovation trajectories: innovation trajectories that cover time spans longer than those of individual projects should form the context for research for development (R4D) programming on complex challenges such as those pursued by IDRC. The Centre increasingly funds its activities by demonstrating to other like-minded donors and research funding agencies how it can add value in program delivery. But IDRC's value proposition lies in the effectiveness with which it can deliver momentum along an innovation trajectory from conception to improved policy and practice. An idealized form of such a trajectory, featuring foundations in antecedent research, the use of learning cycles and feedback loops, close engagement with decision makers, and explicit continuity strategies, is shown in Figure 2. While these concepts are familiar to IDRC, the panel feels that more explicit attention to their implications would aid program management.

Programmatic learning: We found that there was abundant evidence of project learning on the part of individual POs and substantial investments by CCW in monitoring and evaluation. Nonetheless, we concluded that there were insufficient opportunities for sharing of lessons with strategic programmatic relevance. Research programs using innovation trajectories will seek to strengthen and deploy expertise so as to advance knowledge and build momentum towards improved policy or practice. Shared learning from project lessons and engagement with key external actors, and staff training to build familiarity with antecedent research and with innovation theory, can help to redefine problems and refocus programming in rapidly evolving contexts. This contextual diagnosis can guide partnerships and continuity strategies

that extend program influence beyond the projects it funds and position immediate results for strategic application. The central, iterative process that moves this trajectory is programmatic learning.

Influence and continuity strategies: Influence strategies describe in some detail how research outputs will be used through engagement with well-defined decision makers to generate developmental outcomes. Continuity strategies describe how outputs from current research can be used in future projects by IDRC or other donors. Efforts to explicitly articulate these strategies can help the Centre to maintain momentum along an innovation trajectory.

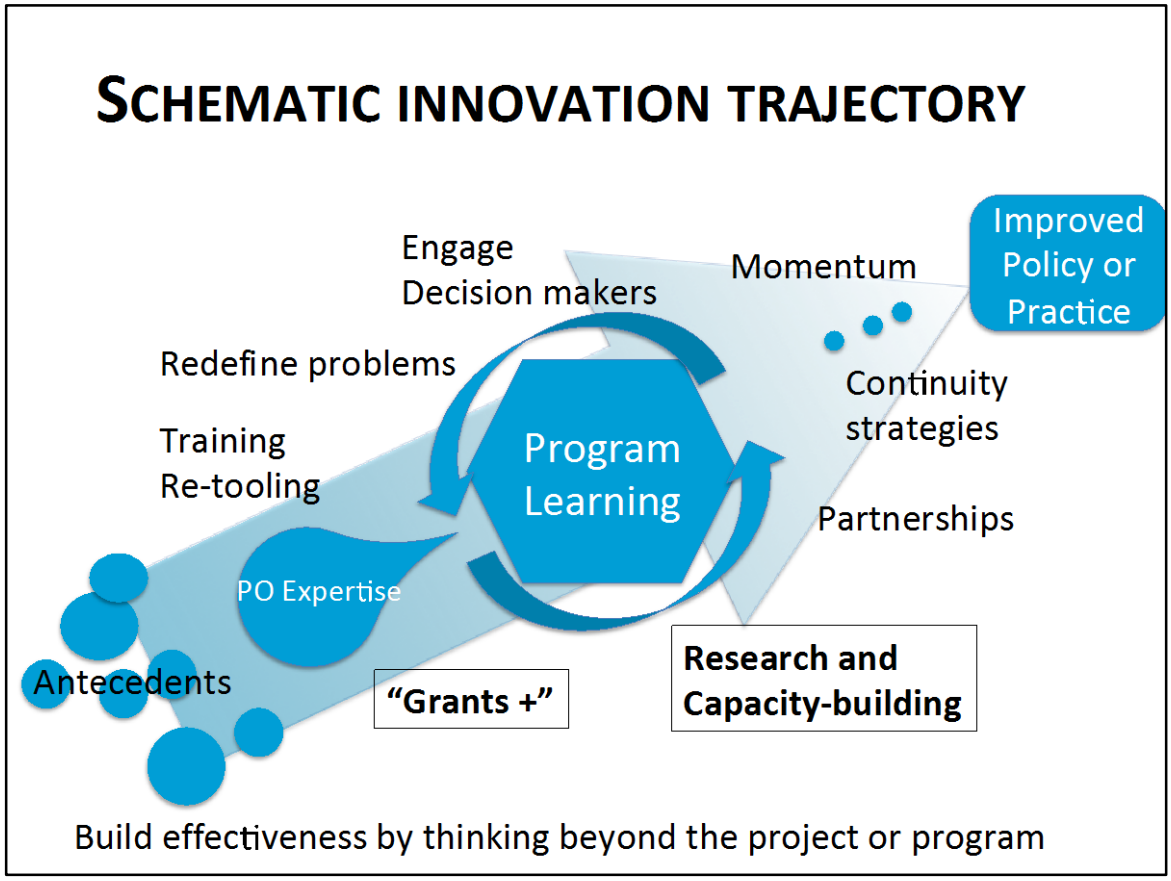

Figure 2. Schematic innovation trajectory

[1] Climate Change and Water Team Planning Meeting Notes, Sept 15-18, 2014
[2] PSED, Scope of Work for External Program Reviews at IDRC, Aug 2014
[3] Transition Brief – CCW Explorations. Oct 2012; CCW Final Prospectus Report
[4] "Invitation to Submit a Full Proposal to IDRC's Climate Change and Water Program – IDRC Research Initiative on Water Resources and Adaptation to Climate Change in Latin America and the Caribbean" (Fast Start II call for proposals); Redwood, M. et. al. Trip Report – Inaugural Workshop of the African Adaptation Research Centres, June 2011
[5] For example: see PAD, 106855, Sept 29, 2011 (ICT awards), PAD, 106291, July 30, 2010 (Cambodia Food Systems and CC), PAD, 106551, March 10, 2011 (Alexandria Research Centre for Adaptation to Climate Change)
[6] See McMillan, R. (2012). "Fast Start II – Asia, Latin America and the Caribbean: Final report of the review process"

[7] Climate Change and Water Program. Monitoring Framework and Tools. Final draft May 27, 2010; Revised March 2012; Revised August 2013

[8] See for example PMRs and PCRs for projects 105721 (Alternative Water Systems Project), 105814 (Climate Change and Human Health in Accra, Ghana) and 105838 (CapaSIDS: Capacity Building and Knowledge on Sustainable Responses to Climate Change in Small Island States)

[9] CCW Annual Learning Forum 2013 Overview

[10] In particular, after a couple of very poor projects led by Canadian research institutions, the program elected not to have Canadian universities lead field research projects

[11] CCW Annual Learning Forum 2012 meeting minutes

[12] See conclusions in Jobbins, et. al. no date. Climate Adaptation and Resilience in Coastal Zones: a review of coastal research funded by the CCW program of IDRC. ODI.

[13] PSED, Scope of Work for External Program Reviews at IDRC, Aug 2014, p. 10

[14] For example, see description of project development in 106248 Water Security in Peri-Urban South Asia; or 105674 Managing the Risk of Flooding in Cape Town

[15] For example, see: PAD, 106291, July 30, 2010

[16] Interviews with L. Blandford (Env Canada) 2014-11-07 and S. Carter (former program manager) 2014-11-04

[17] Interview, L. Blandford, 2014-11-07

[18] On large project risks, see CCW ALF2 meeting minutes Feb 2012; also CCW Risk Management Task Force, (no date), "Fast Start Projects: the need to reinforce risk management"

[19] Examples include the work on Indus floods in Pakistan (106487), introducing new methods in a high-risk political and research environment; the LSE project to develop a practical methodology for economic analysis of adaptation projects (107593); and the CTI/PFAN project exploring potential for private finance of adaptation measures in Africa (107351).

[20] For example: 107081 – where corporate water users are important and active stakeholders in the Maipo Valley; 107351 – exploring how private finance can support adaptation in Africa).

[21] The panel noted PO concerns about the limited time for learning in ALF feedback reports, and time constraints were frequently identified in PCRs as impacting project quality.

[22] Ofir, Zenda, and Thomas Schwandt. 2014. Towards Research Excellence for Development: The Research Quality Plus (RQ+) Assessment Instrument. IDRC.

[23] Climate Change and Water. Final Prospectus Report. Report prepared by the International Development Research Centre's Climate Change and Water program (2010-2015), as part of the program's external evaluation, June 6, 2014, Annex 8.

[24] See, for example, documentation of projects 105524 (Women's Rights and Access to Water and Sanitation in Asian Cities) and 105721 (Alternative Water Systems Project).

[25] Sources include responses in the survey and documentation, for example, PCRs for projects 105721 (Alternative Water Systems Project, 2012), 105838 (CapaSIDS: Capacity Building and Knowledge on Sustainable Responses to Climate Change in Small Island States) and 106298 (Clean Energy and Water : an Assessment of Services for Adaptation to Climate Change, 2013).

[26] See PCR Stages 1, 2 of project 104396 (Rainwater and Greywater Harvesting in Urban and Peri-Urban Agriculture in Ariana-Soukra, Tunisia (Focus City Tunis, 2007) and PCR of project 105524 (Women's right and access to water and sanitation in Asian cities, 2009).

[27] PSED, Scope of Work for External Program Reviews at IDRC, Aug 2014

[28] A rubric was developed for scoring, similar to the RQ+ rubric for assessment of research quality. The rubric with results is shown in Annex 10. The full 15-page report on the detailed document review is shown in Annex 11, including discussion of rubric concepts. References consulted during the detailed project document review are listed in Annex 2.

[29] The OA as used in the FPR are similar in intent but framed slightly differently compared to the OA as defined in the initial CCW program prospectus and in the OA monitoring database – see Annex 8.

[30] Often through small projects or RSP support e.g. UCCRN, IPCC, ICLEI Urban Resilience conferences, IWRA.

[31] A list of project numbers, full titles and the abbreviated titles used in this section is given in Annex 4.

[32] IDRC has considerable experience with strategies to build policy influence from research, lessons from which are synthesized in Carden (2009). CCW has helped researchers to understand the perspectives of decision makers e.g. Session 4 at Workshop on Climate Change Adaptation in the Water Sector (FS II) – Panama, Dec 2-4, 2013.

[33] See Trip Report – Research Communication Workshop, Pretoria SA, Sept 22-26, 2014

[34] Redwood, M. et. al. Trip Report – Inaugural Workshop of the African Adaptation Research Centres, June 2011

[35] Jobbins, et. al. op cit.

[36] For example, see the experiences documented in these projects: 106707 Communicating Climate Change Risk in Coastal Cities in Vietnam; 105674 Managing the Risk of Flooding in Cape Town; 106034 Understanding the cross-scale implications of forest and water management for adaptation in the Nepal Himalayas; 106547 AARC - Renforcement des connaissances économiques et de la capacité d'adaptation face aux changements climatiques au Bénin

External Review – CCW
Annexes

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Annex 1 – External Review Work Plan

Submitted to PSED
July 15, 2014

This workplan has been prepared by review panel members after several rounds of internal discussion and consultation. The overall objective of the workplan is to describe how the panel will arrive at a judgment of overall program performance, and how it aims to identify key issues for IDRC attention based on analysis of the interrelationships among program implementation, research quality, and the relevance and significance of outcomes. The workplan touches on several topics, among them: how to address the four principal evaluation questions included in our TOR, performance rating rubrics, data sources, judgment criteria, sampling strategies, draft data collection instruments, types of analysis, and division of labor among panel members and the research assistant. A separate Gantt chart describing time ranges and deadlines for activities and deliverables accompanies this document and forms an integral part of this workplan.

As part of the workplan preparation process, and in order to "calibrate" our mind-sets and to raise and discuss issues related to the use of rubrics, all panel members conducted an independent review of one selected project. We then compared notes and discussed similarities and differences in rubric question interpretation. By this means we were able to test the new RQ+ rubric and a corresponding scoring sheet we had developed. Insights from this effort have informed the draft workplan. The team believes that some workplan details (e.g. detailed questions for interviews or potential surveys) cannot emerge until after further examination of project documentation.

1. How will you address the four questions?

The team's evaluation methodology will rely on a mixture of approaches and data sources.
Although our investigation will culminate with Q4, its initial focus will be on Q2, beginning with a review of project documentation. This review will primarily address the issue of research quality. This responds to IDRC´s Corporate Strategy and Program Framework 2005-2010 that looks to support research leading to better policies and practices in support of development. The review of documents for Q2 will help us frame our questions for Q1 and Q3.

The several questions are interconnected. An assessment of research quality (Q2) and of the relevance and significance of outcomes (Q3) will contribute to our conclusions on program implementation (Q1). Similarly, conclusions on the coherence, appropriateness, effectiveness and consistency of the program strategy will need to be integrated with evidence on Q2 and Q3 to be able to sensibly interpret program performance and link this to program outcomes. We expect that this integration of the analysis across Q1-3 will reveal useful insights for Q4.

In order to accomplish this integration, our evaluation methodology features iterations of analysis among the four questions. Findings from Q2 will help shape further analysis for Q1 and Q3, for example. Findings from Q1-3 will help shape our response to Q4. Note that each of the first three questions will be primarily addressed using a different methodology. In each case, we will use multiple sources of evidence to triangulate conclusions, as described below.

We do not expect to develop a specific approach to Question 4, but rather to identify any lessons from our work that may be relevant at a broader organizational scale beyond the CCW program and to address these separately in response to Question 4.

Question 1 approach:
How did the program perform in implementing its prospectus?
In applying the rubric for Question 1, which focuses on strategy design and implementation, we will also explore how program decisions were linked to the results from our assessment of research quality and outcomes. The focus in Question 1 is on program management and strategic direction through the implementation period. The evaluation will focus for this question on the coherence, appropriateness, consistency and effectiveness of implementation: did the program do what it said it would, and were changes in strategy well justified? Key issues for evaluation include the program's emerging strategy for partnerships; how it used monitoring information and indicators to inform strategic choices; and how it managed to balance resources between capacity building and research output. Particular attention will be paid to the strategic lessons the program itself drew from experience, and how it reached those conclusions, for example the way in which thematic definitions evolved over time and the implications this had for programming.

We will compare the initial prospectus with the final prospectus report, and summarize the trajectory of the program's evolution, using the program's timeline as a guide. In addition, we will identify key decision points in this trajectory and examine each point from multiple viewpoints, including external drivers, new thematic knowledge, partner priorities, and power relations among partners, among others. We will also identify "surprises" that emerged during program evolution, and assess they ways these surprises were or were not handled or harnessed. Surprises may include: evolving international commitments linked to the UNFCCC process; the stream of new scientific information on the question of climate change vulnerability and adaptive responses; evolution and differences in regional and partner political and policy priorities; and changes in relations among partners.

Finally, we will ascertain whether program evolution is reflected in an evolution in the overall project portfolio (e.g., how new ideas were or were not incorporated into new projects; constraints to using new ideas in old projects; etc), and explore what was achieved through learning and adaptive management.

Question 2 approach:
Overall, was the quality of the research supported by the program acceptable?
Research quality and significance of the research findings to the field of study will take into consideration methodological and scientific standards; context in which the research was conducted and disseminated; intended purpose of the research; potential for application to policy and/or practice; and other influential factors.

The methodology will rely primarily on the RQ+ rubric provided by PSED for this purpose. Key influences with significant potential to effect quality of research for development, as identified in that rubric, include maturity of the research field; research capacity strengthening; risk in the data, research and political environments. The dimensions and sub-dimensions that characterize research quality include research integrity, legitimacy, importance and positioning for use. Our approach will include program-level document review, for example of the final prospectus report and the program's evaluation of coastal research projects. It will however mostly focus on project level documentation, including interim and final research projects, academic and policy-type papers. The criteria to evaluate research quality will include citation analysis; distribution; scholarly research quality; and quality of outputs. Some of this data will be available from program sources, but some will require specific inquiry of recipients or independent bibliometric analysis.

The team's approach to Question 2 and the application of the RQ+ rubric will include careful review, involving all 3 team members, of a sample of approximately 30% of the program's approved Research Projects (see below on sampling strategy). This will provide the bulk of the information for both the rubric and our assessment of research quality. However, we anticipate that we will pursue additional details through interviews with project recipients in a small subset of this sample, partly as a way to triangulate and validate our conclusions. This subset will be selected partly on the basis of gaps or disagreements in the documentary evidence, and partly to reflect recent project activities that may not yet be documented, keeping in mind the overall sampling strategy and logistical factors.

Question 3 approach:
To what extent are the program outcomes relevant and significant?
The conceptual framework for exploring Question 3 will be the "Easter Egg" diagram that distinguishes outputs, outcomes and impacts. This provides clarity as to what is meant by the term "outcomes". Distinct categories of outcomes will be examined, among them knowledge generation, capacity building, behavioral changes or changes in policy or practice, and field-building, for example the development of communities of practice.

As defined in the ER TOR, we will seek to verify the respective contributions of research partners, research users, and other stakeholders towards outcomes, taking account of the field of study, program maturity, financial/ human resources available, research priorities and challenges in context, and other factors.

The initial analysis will use project documentation to tabulate categories of self-reported outcomes across projects and examine the Program's self-critique. Applying the rubrics template, using document review, and key informant surveys, the evaluators will also assess relevance and significance of outcomes, including unreported outcomes. The program has made an explicit effort to synthesize its work both regionally and within specific thematic areas, and results from these synthesis efforts will be important sources of evidence for our work.

Further information on how we will address Question 3 is found in the section below on key questions and judgment criteria.

Question 4 approach:
What are the key issues for IDRCs Board of Governors and senior management?
We will identify program-level key issues that emerge from our integrated analysis across Q1, Q2 and Q3 as described above. We do not expect to develop a specific approach to Question 4, but rather to identify lessons from our work that may be relevant at a broader organizational scale beyond the CCW program and to address these separately in response to Question 4.

2. Key data sources
We will use an iterative approach to data collection and selection of data sources in which early review of program documents and initial interviews will be used to guide and shape subsequent document review, interviews and surveys. Sources will include:
Question 1:

- Review of program documents, including Final Prospectus Report, reports from annual team meetings, staff position descriptions, synthesis documents, stakeholder surveys, and CVs
- Interviews with POs (potentially including POs who have recently left the Centre)
- Reviews of portfolio evolution and the timelines / sequencing of project development

- Assessment of research support activities, both RSPs and staff time, and how these were used to support the research portfolio

Question 2:

- Program and project documentation, including monitoring reports, and project results
- Quality assessment of research outputs
- Selected interviews with recipients

Question 3:

- Program documentation, including the Final Prospectus Report, monitoring reports, synthesis documents, and project reports
- Assessment of synthesis and communication of program results
- Interviews with POs (potentially including POs who have recently left the Centre)
- Interviews with key external partners and target audiences, including research users and grantees, and key audiences for project results

Question 4:

- Information that emerges from analysis of Questions 1, 2 and 3

The team's initial experience with using the RQ+ rubric for Q2 suggests that the various elements of the rubric are defined in accompanying documentation, but that it may be difficult to find evidence solely from project documentation to clearly justify scores. The team members found in this initial effort, in which all three undertook independent (but relatively light) reviews of available documentation of one selected project, that project outcomes and strategic efforts to share results and influence policies were addressed in multiple documents and in different folders on SharePoint and were sometimes difficult to find. The team may seek additional support from program staff if they have particular difficulty in tracking documentation for any particular project in their sample.

We expect to collect information from four different groups to support our analysis and aid in triangulating conclusions from review of documentation: Program staff; grant recipients; external partners and collaborators; and targeted user groups. We expect to use interviews to collect information from the first 3 groups and an online survey instrument for the fourth. In the case of interviews, we expect the number of interviewees to be relatively small (on the order of 10 -12).

3. Judgment criteria

All questions rely on judgment to determine the performance of the program in implementing its prospectus, the quality of research results and the relevance and significance of outcomes to date.

Question 1

For question 1, the performance of the program in implementing its prospectus is largely seen as a question of coherence, appropriateness, effectiveness and consistency of program evolution and implementation. Key questions in this regard will include:

- Was the content and approach of projects and other program activities consistent with commitments in the prospectus? Criteria include:
  - PADs show explicit consideration of priorities
  - Annual review meetings assess consistency relative to prospectus

    - Program monitoring was used by the team for self-assessment
    - Gaps or contradictions were addressed explicitly
- Were changes to programming plans or priorities clearly documented and justified in relation to changing context and program goals? Criteria:
    - Program documentation identified these changes and referred to prospectus goals
    - Changes discussed and conclusions reached at annual staff meetings
- Was the evolution of research project development and funding consistent with the strategy? Criteria:
    - Timing of project development / approval for projects that respond to shifts in strategic priorities
    - Program staff responses to changes in strategy or priorities, as relevant
    - Portfolio structure and funding relative to stated priorities
- Program support and management activities (including recruitment, networking, conferences, leveraging funds, etc) clearly supported desired outcomes. Criteria include:
    - Job descriptions and staffing were linked to prospectus requirements
    - RSPs provided opportunities for leveraging outcomes
    - Other staff support actions (conference presentations, promotional activity)
    - Results from co-funding and leveraging activities
    - Program effectively synthesized and communicated results
- Program developed a strategy identifying target audiences including users and policymakers) and how they would be reached
- Key results captured in synthesis products (link to question 3)
    - Communications products reach intended audiences

We would expect that program evolution over its lifetime would reflect growth and responsiveness to new opportunities, as legacy projects were closed. In addition, we would expect that program objectives and outcomes as described in the prospectus would also evolve in response to changing context. We will look for evidence that program implementation demonstrated opportunistic redirection and intelligent risk-taking in a field that was very new at the start of the prospectus period.

Question 2

For question 2, criteria for judgment are largely spelled out in the RQ+ rubric, which the team will adopt.

Question 3

For question 3, criteria for judgment will follow those listed in the corresponding rubric. Criteria will focus on translating outputs to outcomes, feedback from outputs back to the research process, the process of engagement, the role of evidence in influencing outcomes, and the consequences of confirmed or expected outcomes. Key questions include the following:
To what extent:

- Were decisions on policy and practice evidence-based?
- Was evidence from research projects used in stakeholder engagement?
- Was Program-developed evidence important relative to other sources of evidence in influencing stakeholder decisions (attribution)?
- Were insights from stakeholder engagement captured and utilized as feedback to modify the research program itself (learning)?
- Do outcomes have substantial spatial or temporal coverage (incidence)?
- Are outcomes focused on the problems being addressed (relevance)?

- Have outcomes demonstrated or are likely to demonstrate favorable economic returns (significance)?
- Have outcomes had (or are likely to have) favorable distributional consequences, including those related to gender (appropriateness)?
- Was the process of stakeholder engagement leading to outcomes influenced by partner or stakeholder power relations (appropriateness)?
- Did research evidence influence decision maker knowledge, attitudes and skills (KAS)?
- Does the pathway from research activities to outputs to outcomes represent the anticipated theory of change – and whether the TOC itself has gone through iterations of updating

The team will rely on sharing of results from common interviews and survey instruments, to be applied to different questions as relevant. In order to harmonize our approach to data collection where multiple team members will use data from the same interview, we will collaborate on interview / survey design and test questions together for initial application to ensure shared interpretations.

4. Sampling strategy

Our sampling strategy focuses primarily on selecting projects for detailed review, mainly for the RQ+ rubric used in Question 2. In addition to project sampling, we also plan a survey of about 20 external target audience representatives to assess program evolution and outcome communication. Our sampling of projects will include both legacy projects (initiated under previous prospectuses) and new projects under CCW. The sampling strategy for each of the three questions is as follows:

- *Question 1*: A sample of PADs will be reviewed from a subset of the projects sampled for Question 2; in addition a survey will be undertaken of up to 20 communications target audiences selected purposively from a list generated in consultation with the program leader (in conjunction with question 3). The survey will focus on the communication of program results and will be implemented through an online tool such as survey monkey.
- *Question 2:* Two-stage sampling of projects for RQ+ review. The initial stage will include the review of key project documents and outputs. This will involve selecting approximately 30% of the portfolio of research projects for assessment. The sample will ensure proportionate representation from legacy and new projects, and will be stratified to ensure representation across the program themes and regions in different project size ranges. The second stage will include interviews with grantees for projects selected either because of specific features revealed in the documentary review; or because of limited documentation available. Once the sample has been selected, each member of the external review team will review 2 or 3 projects and share and discuss results to confirm that the sampling parameters seem valid and that data sources are adequate and work load reasonably allocated.
- *Question 3*: Data collection will be based on the same samples selected in other questions. The team will make a systematic effort to design interview questions and survey instruments to enable sharing of data among team members focusing their analytical efforts on different questions.

5. Draft Instruments

The team's methodology relies on initial review of project documentation in order to first score research quality. This review will generate insights about project design and outcomes that will help to inform the details of our methodology for approaching Questions 1 and 3.

In particular, we expect that the results of project documentation review, along with parallel review of program documentation (such as the FPR and program meeting notes) will help the ER team to identify specific questions for POs related to program strategy, project development, and thematic evolution.

Similarly, the documentation review will help the team to identify questions that we will want to pose to a small sample of grant recipients; and to program partners or target audiences. Interview topics related to Question 3 will be guided by the Q3 "judgment criteria key questions" discussed above. The team feels that it is inappropriate and premature to present specific draft survey instruments or interview questions at this time, but will be in a position to do so on or before August 25.

6. Type of analysis within and across data sources

Data collection and judgment criteria are described above for Questions 1 – 3. Analytical responsibilities The analysis used within and across data sources will include a triangulation of information involving multiples lines of evidence comparing the knowledge and perception of key program stakeholders. For each question, this approach can be summarized as follows:

Question 1: The type of analysis for Q1 will require a comparison of evidence from program documentation with PO interviews; and with interviews with partners. Evaluators will highlight and illustrate examples from project research quality assessment, and from Q3 outcomes.

Question 2: This question will require a detailed review and analysis of the RQ+ rubric, which will be applied to a sample of approximately 25 projects.

Question 3: Using project documentation, evaluators will tabulate categories of self-reported outcomes across projects. This analysis will use document review, key informant interviews and a short survey of external research users and key audiences to assess relevance and significance of outcomes (including unreported outcomes). This analysis will include careful examination of the following:

- For CB, knowledge generation and field-building, check self-reported outcomes vs. perceptions of beneficiaries, colleagues, peers, members of community of practice; possibly conduct a survey to measure changes in knowledge, attitudes and skills (KAS) of next users and decision makers as affected by project or program activities or outputs.
- For policy and practice check self-reported outcomes with next users or decision makers vs. expert observers
- Check evidence on attribution
- Check logical link between outputs and outcomes – self-reported vs. information from others
- For policy and practice check self-reported outcome attribution vs. perception of other actors regarding influences on decision making
- Others as needed to answer key questions

7. Key tasks for research assistant

The research assistant will support panelists with key document review, edit and format of outputs, coordination of activities, and liaison and follow up with IDRC. She will also be they first communication point with IDRC staff and will submit monthly activity reports highlighting panel activities. These reports will be shared with CSED in mid-August, mid-September, and mid-October.

The research assistant will support the collection, organization and synthesis of data, and assist the team in presenting their findings (e.g. preparation of tables, charts, diagrams). She will also support preparation and administration of survey instruments, and help with some of the interviews.

In addition, every two weeks, she will share a summary of her activities and hours spent supporting the CCW external evaluation. This summary will be signed by a member of the panel and shared with CSED's Juliana Bravo.

The external panelists may require other tasks as the evaluation progresses.

8. Division of labour

All three external reviewers will be involved in data collection, analysis and writing of the report. However, different members of the team will focus on specific questions and on specific sets of interviews for efficiency's sake.

Stephen Tyler: Will lead drafting of the workplan and focus analytical attention on Question 1. Stephen will be primarily responsible for interviews with POs and with external partners, and will be involved in some of the project level analysis for Question 2. Stephen will draft the final report section dealing with Question 1.

Cecilia Tortajada: Will contribute to the workplan and lead the analysis of research quality (Question 2) and recipient interviews (particularly in Spanish). She will also lead the drafting of the final report section dealing with Question 2. Finally, she will focus analytical attention to Question 4 as well as report drafting for this question.

Larry Harrington: Will contribute to the workplan and participate in project documentation review and research quality assessment (for Question 2). He will primarily focus on Question 3, leading the data collection and analysis, as well as report drafting, for this question. In addition, he will lead the survey of research users / target groups, contribute to interviews of recipients and POs, and coordinate the assembly and lead drafting of the final report.

Stephanie Tissot: Will provide ongoing support to panelists in areas including but not limited to: document retrieval, data organization, analysis and syntheses, survey questionnaire administration and analysis, and support interviews.

9. Key Dates and Deliverables

Date	Deliverable
Tuesday, July 15	Workplan draft due
Friday, August 15	Mid-month report of activities due
Friday, September 12	Mid-month report of activities due
Thursday, October 16	Mid-month report of activities due
Mid-late November	5 –day external Program Review Meeting at IDRC
Wednesday, December 3	Final draft External Program Review Report due
Wednesday, December 17	PSED reviews report and provides corrections/comments
Mid-December-Mid-January 2015	Panelists correct factual errors, respond to PSED's comments
Mid-end January 2015	Final report due

Annex 2 – List of Key Documents Reviewed for the Evaluation

CCW Program-level Documents

Balbo, A., & Kavanaugh, L. (2013). Dissemination and synthesis of urban/peri-urban climate change adaptation projects at Resilient Cities 2013. Bonn: ICLEI-Local Governments for Sustainability.

CATHALAC, & IDRC. (2013). *Climate change adaptation in the water sector: How can research best meet the demands of decision makers?* Report of the Meeting of IDRC ARI-LAC recipients, Panama City.

CCW. (2010). CCW team meeting minutes, 6-7 May. Ottawa: IDRC.

CCW. (2010). IDRC African Adaptation Research Centres Initiative: Closed call for proposals: IDRC.

CCW. (2010). AARC proposal review meeting minutes, 16 December. Ottawa: IDRC.

CCW. (2010). Call for concept notes: Adapting to climate change in vulnerable coastal communities IDRC.

CCW. (2011). CCW first annual learning forum (ALF) meeting minutes, 26-28 January. Ottawa: IDRC.

CCW. (2011). Annual report of activities 2010-2011. Ottawa: IDRC.

CCW. (2011). Invitation to submit a full Proposal to IDRC's Climate Change and Water program – IDRC Research Initiative on Water Resources and Adaptation to Climate Change in Latin America and the Caribbean.

CCW. (2011). Guidelines for the preparation of research proposals: Adapting to climate change in vulnerable coastal communities: IDRC.

CCW. (2011). Coastal proposal review meeting minutes, 19 May.

CCW. (2011). Invitation to Submit a Full Proposal to IDRC's Climate Change and Water Program – IDRC Research Initiative on Water Resources and Adaptation to Climate Change in Asia.

CCW. (2012). CCW second annual learning forum (ALF) meeting minutes, 1-2 February. Ottawa: IDRC.

CCW. (2012). Annual report of activities 2011-2012. Ottawa: IDRC.

CCW. (2012). Transition brief. CCW explorations: Energy-water nexus and ICTs. IDRC.

CCW. (2012). Fast start II Asia proposal selection meeting minutes, 4 April Ottawa: IDRC.

CCW. (2012). Fast start II LAC proposal selection meeting minutes, 13 April Ottawa: IDRC.

CCW. (2013). CCW planning meeting minutes, 9-10 May. Ottawa: IDRC.

CCW. (2013). Monitoring framework and tools (created May 2010, revised March 2012 and August 2013).

CCW. (2013). Annual report of activities 2012-2013. Ottawa: IDRC.

CCW. (2014). Climate Change and Water final prospectus report (2010-2015). Ottawa: IDRC.

CCW. (2014). CCW dashboard spreadsheet. Ottawa: IDRC.

CCW. (2014). CCW outcome database reports. Ottawa: IDRC.

Datta, A. (2012). Review of Climate Change and Water project completion reports for fiscal year 2011-12. Ottawa: IDRC.

IDRC, & SaciWATERs. (2013). *Adapting to climate change and water security in Asia.* Paper presented at the Regional meeting for IDRC-funded partners in Asia working on climate change research, Kathmandu, Nepal.

Jobbins, G., Doczi, J., & Wilkinson, E. (2014). Climate adaptation and resilience in coastal zones: A review of coastal research funded by the Climate Change and Water Programme of Canada's International Development Research Centre London: ODI.

Lamond, M. (2013). Review of Climate Change and Water project completion reports for fiscal year 2012-13. Ottawa: IDRC.

McMillan, R. (2012). Fast Start II – Asia, Latin America and the Caribbean: Final report of the review process. Ottawa: IDRC.

PPB. (2010). Climate Change and Water: Program prospectus for 2010-2015. Ottawa: IDRC.

UPE. (2007). Working operational plan - Focus cities research program. Ottawa: IDRC.

Zeidemann, V., Rivero, S., & Almeida, O. (2013). *Adapting to climate change in coastal and delta areas in developing countries.* Report from the Regional meeting for IDRC-funded partners in coastal and delta areas, Belém do Pará, Brazil.

Project-level Documents

Project 104150

Callaway, J., Louw, D., Hellmuth, M., Nkomi, J., & Sparks, D. (2008). Chapter 3: Benefits and costs of adapting water planning and management to climate change and water demand growth in the Western Cape of South Africa. In N. Leary, C. Conde, J. Kulkami, A. Nyong & J. Pulhin (Eds.), *Climate Change and Vulnerability and Adaptation* (pp. pp. 53-70). London: Earthscan.

Louw, D., Johnston, P., Tadros, M., Schulze, R., Lumsden, T., Callaway, M., & Helmuth, M. (2012). Final technical report. IDRC project 104150. Cape Town: University of Cape Town/University of Kwazulu Natal.

Nkomi, J. C., Callaway, M., Hellmuth, M., Sparks, D., & Louw, D. B. (1995). Adaptation to climate change: The Berg River basin case study. Cape Town: Energy Research Centre, University of Cape Town.

Project 104347

Arce, B. (2010). Evaluación externa final. IDRC project 104347.

Castro, C. (2008). Segundo informe técnico de avances. IDRC project 104347.

IDRC. (2007). Project approval document. 104347 - Enhancing capacity for innovation, increasing productivity and acess to markets by peri-urban producer organizations in Latin America.

Ubal Giordano, W. (2011). Project completion report. Project 104347. Montevideo: IDRC.

Project 104396

Bouraoui, M., & Houman, B. (2012). Rapport technique final. IDRC project 104396. Tunis: Fédération tunisienne des clubs UNESCO ALESCO.

IDRC. (2008). Project approval document. 104396 - Rainwater and greywater harvesting in urban and peri-urban agriculture in Ariana-Soukra, Tunisia.

Owaygen, M. (2007). Project completion report - Stage 1. 104396.

Redwood, M. (2012). Project completion report - Stage 3. Project 104396. Ottawa: IDRC.

Redwood, M. (2012). Project monitoring report. Project 104396: IDRC.

Redwood, M., Bouraoui, M., Houmane, B. (2014) Rainwater and greywater harvesting for urban food security in La Soukra, Tunisia. *International Journal of Water Resources Development, 30*(2), 293-307. Doi: 10.1080/07900627.2013.837367

Project 104397

Barrantes, R., & Piselli, R. (2012). Final technical report. IDRC project 104397. Lima: IEP (Instituto de Estudios Peruanos) and IDRC.

Barrantes, R., & Piselli, R. (2012). Metodología de evaluación de reubicación de poblaciones en áreas expuestas a peligros naturales relacionados al cambio climático: Estudio de Caso de la Margen Izquierda del Río Rímac, Lima Metropolitana. IPE Instituto de Estudios Peruanos.

Cabrera Carranza, C. F. (2010). Impacto del cambio climático en la margen izquierda del Río Rimac – MIRR Lima: IMP, CENTA and IDRC.

CENCA, & IMP. (2012). Sistematizacion: Una experiencia de investigación acción participativa de reducción de la vulnerabilidad en la Margen Izquierda del Rio Rímac del Cercado de Lima, Proyecto Ciudades

Focales – Lima, IDRC.
CENCA, & IMP. (2012). Una aproximacion al estudio de vulnerabilidad ante desastres en Lima Metropolitana, Proyecto Ciudades Focales – Lima, IDRC.
Chambi Echegaray, G., & Escalante Estrada, C. (2010). *Plan de desarrollo concertado con enfoque de gestión del riesgo y reducción de la vulnerabilidad margen izquierda del Rio Rimac de Cercado de Lima al 2020.* IDRC project 104397. IMP and CENTA. Unpublished.
IDRC. (2008). Project approval document. 104397 - Focus city - Integrated and participatory research aimed at reducing vulnerability, poverty and environmental loads in Cercado de Lima, Peru.
IDRC. (n.d.). Reducing physical vulnerability of residents and risks due to disaster: Lima and the left bank of the Rimac River. Research brief. IDRC project 104397. Ottawa: IDRC.
IMP, CENCA, & IDRC. (2010). Impacto del cambio climático en la margen izquierda del Río Rimac – MIRR, Proyecto Ciudades Focales – Lima, IDRC
Ubal Giordano, W. (2010). Project monitoring report. Project 104397. Montevideo: IDRC.
Ubal Giordano, W. (2012). Project completion report. Project 104397. Montevideo: IDRC.

Project 104554

Alurralde, J., Ramirez, D., Garcia, M., Villarroel, E., Salazar, D., & Pacheco, P. (2012). *Climate change effects on the livelihoods of Illimani glacier's communities*. Paper presented at the World Congress on Water, Climate and Energy, Dublin.
Agua Sustentable. (2011). *Living with glaciers: Adapting to climate change. The experience of the Illimani project in Bolivia.* Unpublished PowerPoint presentation. IDRC project 104554.
Agua Sustentable. (2012). *Enforcing Capacity and Developing Strategies for Adaptation to the Phenomena of Climate Change in Communities of the Cordillera Real in the Central Andes of Bolivia. Executive Summary*.
Soto Trujillo, A. (2011). Impact of climate change in Andean Bolivian communities that depend from tropical glaciers: Agua Sustentable.

Project 104783

IDRC. (2008). Project approval document. 104783 - Landuse change, biofuels and rural development in the La Plata Basin.
Inter-American Institute for Global Change Research. (2011). Final project report. IDRC project 104783. São Paulo.
Lenart, M. (2012), A river runs through it: Argentina's Rio Nievo portends problems to come in South America. Guest Blog, Scientific American Blog Network. Retrieved from http://blogs.scientificamerican.com/guest-blog/2012/04/10/a-river-rams-through-it-argentinas-rio-nuevo-portends-problems-to-come-in-south-america/
Nogar, A.G., & Capristo, M.V. (2008). Pequeñas localidades y turismo rural. Puesta en valor de las lagunas en Benito Juárez (pp. 151-163). In *Espejos en la Llanura. Nuestras lagunas de la Región Pampeana.*
Richeter, P. (2011). Editorial. *Inter-American Institute for Global Change Research Newsletter.*
Rondón, M. (2011). Project completion report - Stage 3. Project 104783. Ottawa: IDRC.

Project 104899

AUB. (2011). Project progress May 2008 to present. Unpublished PowerPoint presentation. IDRC project 104899.
IDRC. (2007). Project approval document. 104899 - Participatory Improvement of Water and Sanitation Services in Tripoli.
Redwood, M. (2011). Project monitoring report. Project 104899. Ottawa: IDRC.
Redwood, M. (2012). Project completion report. Project 104899. Ottawa: IDRC.

Project 105185

BPD. (2009). Communications and dissemination Strategy. IDRC project 105185.

IDRC. (2009). Project approval document. 105185 - Assessing multi-stakeholder partnerships in the water and sanitation sector within the context of urban policies in LAC.

Robertson, M. (2013). Project completion report. Project 105815. Ottawa: IDRC.

Ubal Giordano, W. (2011). Project monitoring report. Project 105185. Montevideo: IDRC.

Ubal Giordano, W. (2012). Project completion report. Project 105185. Montevideo: IDRC.

Project 105410

Ali, M., Mohammad, M. Al Mahdi, S., Abi-Said, M., & Dandache, L. (2011). From seed to table: Impact monitoring study of the production of free-range eggs in Sana'a-Yemen. ESDU, RUAF Foundation, and Yemen Associaton for Sustainable Agricultural Development. Unpublished report.

Capital's rooftops to go green under GAM initiative. *The Jordan Times*, 31 March 2010.

Dubbeling, M. (2011). Final technical report. Project 105410. Leusden: RUAF Foundation.

Hamadeh, S. (2009). The sustainable livelihoods approach in MENA: A bittersweet experience. Paper presented to the Expert Group Meeting on "Adopting the Sustainable Livelihoods Approach for Promoting Rural Development in the ESCWA Region," Beirut, 21-22 December.

IDRC. (2009). Project approval document. 105410 - The RUAF "From Seed to Table" (FSTT) programme in the MENA region 2009-2011: Strengthening urban farmers organisations and their marketing capacities. Ottawa.

Redwood, M. (2010). Project completion report - Stage 1. Project 105410. Ottawa: IDRC.

Redwood, M. (2012). Project completion report. Project 105410. Ottawa: IDRC.

RUAF-AUB. (2011). Annual technical report 2010. Project 105410. Beirut.

Sawwan, J. (2010). Impact monitoring study of the production of green onions in Amman, Jordan. ESDU and RUAF Foundation. Unpublished report.

Tawk, S.T., Moussa, Z., Hamadeh, S., & Saiid, D.A. (2011, September). Developing value chains in Amman, Jordan. *Urban Agriculture magazine, 25*, 54-56.

Project 105515

Abdrabo, M. A. (2012). *Final technical report. IDRC project 105515*. Coastal Research Institute. Alexandria.

Elshinnawy, I. A., Abdrabo, M. A., & Farouk, A. (Eds.). (2012). *Sea Level Rise in the Nile Delta: Impacts, Vulnerability and Adaptation. Case studies and lessons learned from Ras el Bar – Gamasa areas*. Cairo and Alexandria: Coastal Research Institute/Institute of Graduate Studies and Research/Center for Development Services.

Redwood, M. (2012). Project completion report. Project 105515. Ottawa: IDRC.

Yahia, M. (2012, July 28). Facing the tide. *Revolve*.

Project 105524

Canuto, M., Travers, K., Khosla, P., Dhar, S., & Mehrotra, S. T. (2010). Interim technical report. IDRC project 105524. Montreal: Women and Cities International/Jagori.

IDRC. (2009). Project approval document. 105524 - Women's rights and access to water and sanitation in Asian cities.

Mitchell, C. (2010). Project completion report - Stages 1 and 2. Project 105524. Ottawa: IDRC.

Mitchell, C. (2010). Project monitoring report. Project 105524. Ottawa: IDRC.

Mitchell, C. (2012). Project completion report. Project 105524. Ottawa: IDRC.

Travers, K., Khosla, P., & Dhar, S. (Eds.). (2011). *Gender and essential services in low-income communities. Report on the findings of the action research project women's rights and access to water and*

sanitation in Asian cities. Montreal: Women and Cities International, Jagori, and IDRC.
Women and Cities International/Jagori. (2009). Inception report. IDRC project 105524. New Delhi.

Project 105567

IDRC. (2009). Project approval document. 105567 - Enhancing resilience of rural communities to reduce impacts of droughts, floods and frost in the Mantaro Valley, Peru. Ottawa.
Martínez, A. G. (2012). Informe técnico final. IDRC project 105567. Lima: Instituto Geofísico del Perú.
Rondón, M. (2012). Project completion report. Project 105567. Ottawa: IDRC.

Project 105674

Cartwright, A., Parnell, S., Oelofse, G., & Ward, S. (Eds.). (2012). *Climate change at the city scale: Impacts, mitigation and adaptation in Cape Town*: Routledge.
Colenbrander, D., Cartwright, A., & Taylor, A. (Forthcoming). Drawing a line in the sand: Managing coastal flooding risks in the city of Cape Town. *South African Geographical Journal.*
IDRC. (2009). Project approval document. 105674 - The power of collaborative governance: Managing the risks associated with flooding and sea-level rise in the city of Cape Town.
Joubert, L., & Martindale, L. (2013). Rising waters: working together to solve Cape Town's flooding. Flooding in Cape Town under Climate Risk (FliCCR) Project: African Centre for Cities, University of Cape Town.
Laros, M. (2011). Implementing the principles of the integrated coastal management act: Applying set-backs to regulate coastal development. Summary Report of Workshop Outcomes, Tokai, August 16-17.
Leone, M. (2011). Project monitoring report (March). Project 105674. Ottawa: IDRC.
Leone, M. (2013). Project completion report. Project 105674. Ottawa: IDRC.
Leone, M. (2013). Project monitoring report. Project 105674. Ottawa: IDRC.
Musungu, K., Motala, S., & Smit, J. (2012). Using multicriteria evaluation and GIS for flood risk analysis in informal settlements of Capetown: the case of Graveyard Pond. *South African Journal of Geomatics, 1*(1), 77-91.

Project 105707

Güereca, L., Musharrafie, A., Martínez, E., Padilla, A., Morgan, J., & Noyola Robles, A. (2011). *A comparative life cycle assessment of a wastewater treatment technology considering two inflow scales.* IDRC project 105707. Unpublished.
Musharrafie, A., Güereca, P., Padilla, A., Morgan, J., & Noyola, A. (2011). *A comparison of two wastewater treatment plants: Stabilization ponds and activated sludge with a social perspective impacts.* IDRC project 105707. Unpublished.
Noyola, A., Padilla-Rivera, A., Morgan-Sagastume, J., Güereca, L., & Hernandez-Padilla, F. (2012). Typology of municipal wastewater treatment technologies in Latin America. *Clean – Soil, Air, Water, 40*(9), 926–932. doi: 10.1002/clen.201100707
Noyola Robles, A. (2012, December 4, 2012). En América Latina sólo el 20% del agua es tratada: UNAM, *El Occidental*.
Noyola Robles, A., Güereca Hernández, L. P., Morgan Sagastume, J. M., Hernández Padilla, F., Padilla Rivera, A., Carius, C., . . . Villalba, E. (2013). *Final technical report. IDRC project 105707*. UNAM. Mexico, D.F.
Padilla, A., Guereca, L. P., Morgan, J. M., & Noyola, A. (2013). *Social life cycle assessment: A comparison of wastewater treatment facilities in Mexico. PowerPoint presentation.* IDRC project 105707. Presented at the 3rd International Seminar on Social LCA, Montreal.
Ubal Giordano, W. (2014). Project completion report. Project 105707. Montevideo: IDRC.

Project 105721

Ali, S.I. (2010). Alternatives for safe water provision in urban and peri-urban slums. *Journal of Water and Health*, *8*(4), 720-734.

Ali, S.I., Hall, K.R., Aronson, K., & Philip, L. (2009). Humanitarian engineering in Mylai Balaji Nagar: An integrated water, environment and public health project for slums in the Indian Subcontinent. *Desalination, 248,* 418-427.

Ali, S. I., & Philip, L. (2009). Post-inception report. IDRC project 105721. Guelph: University of Guelph/Indian Institute of Technology.

IDRC. (2009). Project approval document. 105721 - Alternative water systems project.

MacDonald, M., Hall, K., & Philip, L. (2011). Third interim technical report. IDRC project 105721. Guelph: University of Guelph/Indian Institute of Technology.

MacDonald, M., Imran, S., Hall, K., & Ligy, P. (2012). Final technical report. IDRC project 105721. Guelph: University of Guelph/Indian Institute of Technology.

MacDonald, M.C., Philip, L., Ali, S.I., Srinivasan, S., Jincy, J., Sambath, A. K., Sagayaraj, I.R., & Hall, K. (2012). Collaborative innovation for the development of contextually appropriate water treatment technology in a marginalized, low-income, South Asian community. *International Journal on Knowledge, Technology and Society*, *8*.

Mitchell, C. (2010). Project monitoring report. Project 105721. Ottawa: IDRC.

Mitchell, C. (2011). Project monitoring report. Project 105721. Ottawa: IDRC.

Mitchell, C. (2013). Project completion report. Project 105721. Ottawa: IDRC.

Project 105814

Adera, E. (2013). Project completion report. Project 105814. Nairobi: IDRC.

Codjoe, S. (2011). Fourth interim report. IDRC project 105814. Accra: Regional Institute for Population Studies, University of Ghana.

Codjoe, S. (2012). Fifth interim report. IDRC project 105814. Accra: Regional Institute for Population Studies, University of Ghana.

IDRC. (2010). Project approval document. 105814 - Climate change and human health in Accra, Ghana.

Lo, H. (2012). [Transition notes for projects 105814 and 105869].

Project 105838

Alves, L.M., & Costa, A.L. (2011). Desenvolvimento urbano em contexto de alterações climáticas. Presentation, Praia, 20 October. Sol & Vento.

Alves, M. (n.d.). Análise da Eficácia da Metodologia de Investigação-Acção Participativa (IAP) no Desenvolvimento de Capacidades para uma Resposta Sustentável Face às Alterações Climáticas em Cidades Lusófonas de Pequenos Estados Insulares em Desenvolvimento. Caso de estudo ilha de S. Vicente (Cabo Verde) e de São Tomé (São Tomé e Príncipe). Unpublished thesis proposal.

Beaulieu, N. (2011, June). Project monitoring report. Project 105838: IDRC.

Brito, L.P. (2012). O turismo em São Vicente face às alterações climáticas. Working paper. IDRC project 105838.

Costa, A. (2010). Lista preliminar de stakeholders do Projecto KSIDS no Mindelo. IDRC project 105838.

Costa, A. (2010, June). Relatório do I Workshop Internacional do Projecto KSIDS no Mindelo. IDRC project 105838.

Costa, A. (2010). Presentation to the Coastal Zone Canada 2010 Conference, Charlottetown, PE, 25 July.

Costa, A. (2010, December). Relatório de Workshop de Restituição do Projecto KSIDS. IDRC project 105838.

Costa, A. (2011). Guia de cenarização do desenvolvimento socioeconómico. Documento técnico. IDRC project 105838.

Costa, A. (2011). Guia de cenarização do desenvolvimento socioeconómico II fase – Quantificação caso de São Vicente, Cabo Verde. Documento técnico. IDRC project 105838.

Costa, A. (2012, December). Projecto KSIDS: Relatório de Formação. IDRC project 105838.

Costa, A., & Alves, L. (2010, September). Relatório de Workshop de Lançamento do Projecto KSIDS em São Tomé. IDRC project 105838.

Costa, A., & Alves, M. (2011). Agentes e Instituições: análise das parcerias no âmbito do projecto KSIDS. Working paper. IDRC project 105838.

Costa, A., & Pessoa, J. (2010, December). Relatório de Workshop de Lançamento do Projecto KSIDS em São Tomé. IDRC project 105838.

Da Cruz, E. (2011). Conjuntura económica da ilha de São Vicente: Enquadramento, evolução e situação da situação em 2010. Documento técnico. IDRC project 105838.

Évora, J., & Costa, A. (2011). Estimativa da conjuntura económica da ilha de São Vicente em 2010. Documento técnico. IDRC project 105838.

Gualberti, G. (2012). Financiamento para adaptação às alterações climáticas para países em desenvolvimento. Working paper. IDRC project 105838.

IDRC. (2010). Project approval document. 105838 - CapaSIDS: Capacity building and knowledge on sustainable responses to climate change in small island states.

KSIDS. (2011). Relatório de restituição em São Tome do I Workshop Internacional do Projecto KSIDS no Mindelo. Report of I Encontro: "Brainstorming" para definir uma Visão Partilhada de São Vicente no Futuro, June. IDRC project 105838.

KSIDS (2011). Elaboração de cenários de desenvolvimento socioeconómico para a Cidade de São Tomé. Report of I Encontro: "Brainstorming" para definir uma Visão Partilhada de São Tomé no Futuro, June.

Lima, J. (2012). Recursos hídricos e alterações climáticas em São Tomé: Análise da situação actual e vulnerabilidades. Working paper. IDRC project 105838.

Leone, M. (2013). Project completion report. Project 105838. Ottawa: IDRC.

Leone, M., & Beaulieu, N. (2011). Project monitoring report (September). Project 105838. IDRC.

Novias, T., Sanches, R., & Costa, A. (2012). Base de dados informação geográfica – S. Vincente (Cabo Verde) – Manual do utilizador. IDRC project 105838.

Moniz, E., & Loloum, B. (2011). Diagnostico socioeconómico do Distrito de Água Grande, São Tomé e Príncipe. Working paper. IDRC project 105838.

Pereira, J., & Rocha, A. (n.d.). Alterações climáticas do nível do mar em Portugal Cabo verde e São Tomé. CESAM e Departamento de Física – Universidade de Aveiro. Unpublished PowerPoint presentation.

Pessoa, J. (2010, June). Relatório de restituição em São Tome do I Workshop Internacional do Projecto KSIDS no Mindelo. IDRC project 105838.

Rocha, A., Costa, A., & Sanches, R. (2011). Clima & cenários climáticos em Cabo Verde e São Tomé e Príncipe. Working paper. IDRC project 105838.

Sanches, R. (2010). Programa de trabalhos FCT 2010. Escoamentos em zonas urbanas de cidades Lusófonas de pequenos estados insulares em desenvolvimento (SIDS): Caso de estudio do Mindelo (Cabo Verde) e São Tomé e Príncipe. Doctoral thesis workplan.

Sanches, R. (2012). Avaliação da rede de drenagem de água residual pluvial da cidade do Mindelo. Working paper. IDRC project 105838.

Sanches, R., & Martins, R. (2012). Engenharia natural: Técnicas e casos de estudo – Adaptabilidade a Cabo Verde. Paper presented at the I Workshop Internacional do Projecto KSIDS no Mindelo, 19 April, Biblioteca Municipal de São Vicente.

Tienne, V. (2012). Análise da vulnerabilidade da Câmara Municipal de São Vicente perante as alterações climáticas. Working paper. IDRC project 105838.

Project 105868

Fairhurst, L. (2011). Second interim report. IDRC project 105868. Cape Town: ICLEI.
Fairhurst, L. (2011). Third interim report. IDRC project 105868. Cape Town: ICLEI.
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Annex 3 – List of Individuals Interviewed

Adhikari, Bhim – Senior Program Specialist, CCW
Blandford, Lawrence – Director, Partnerships Division, Climate Change International, Environment Canada
Braun, Heidi – Program Officer, CCW
Carter, Simon – Director, IDRC Regional Office for Sub-Saharan Africa
Iglesias, Alicia – Program Management Officer, CCW
Leone, Michele – Senior Program Officer, CARIAA, IDRC (formerly Senior PO, CCW)
Lulham, Nicole – Program Management Officer, CCW
MacAlister, Charlotte – Senior Program Officer, CCW
Mitchell, Carrie – Assistant Professor in Planning, University of Waterloo (formerly Senior PO, CCW)
Ofwona-Adera, Edith – Senior Program Specialist, CCW
Proulx, Isabelle – Program Manager, CARIAA, CCW, and Environmental Economics, IDRC
Redwood, Mark – Program Leader, CCW
Rondon, Marco – Senior Program Specialist, CCW
Ubal, Walter – Senior Program Specialist, CC

Annex 4 - Sampling Strategies and Selected Projects for Evaluation Questions 1-3

Question 1

This question has a total sample of 20 projects. All of these projects are "new" in the sense that they started after approval of the prospectus. The key documentation used for this question is the PAD and project development correspondence. 5 projects were chosen to overlap with the sample for Q2, and 5 projects were selected to overlap with the "high profile" sample for Q3. The other 10 were selected at random from the total list of projects approved after 2010. One substitution was made to ensure an awards project was included.

Q1 Sample:

- **105674** The Power of Collaborative Governance: Managing the Risks Associated with Flooding and Sea-level Rise in the City of Cape Town
- **106034** Understanding the cross-scale implications of forest and water management for adaptation-mitigation and food security in the Nepal Himalaya
- **106171** Economics of Climate Change Adaptation
- **106248** Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation
- **106291** Food Security and Climate Change in Cambodia
- **106326** Building Capacity to Adapt to Climate Change in Southeast Asia
- **106487** Building research capacity to understand and adapt to climate change in the Indus Basin
- **106547** AARC - Renforcement des connaissances économiques et de la capacité d'adaptation face aux changements climatiques au Bénin
- **106548** AARC - Climate Change Adaptation Research and Capacity Development in Ghana
- **106549** AARC - Irrigation et information climatique au Burkina Faso: de la recherche au renforcement des capacités institutionnelles et communautaires
- **106551** AARC - Establishing the Alexandria Research Centre for Adaptation to Climate Change (ARCA)
- **106552** AARC - Enhancing Climate Change Adaptation in Agriculture and Water Resources in the Greater Horn of Africa
- **106591** Improving food & livelihood security in Punjab through water-energy-agriculture management under climate change and variability
- **106667** African Adaptation Research Centres Inaugural Workshop
- **106703** Strengthening livelihood security and adapting to climate uncertainty in Chilika Lagoon, India
- **106707** Communicating climate change risks for adaptation in coastal and delta communities in Vietnam
- **106855** Application of ICTs for Water Management under Changing Climatic Conditions: Research Awards Program
- **107086** FS 2 - Adapting to Climate Change in Urbanizing Watersheds
- **107562** Support for Urban Climate Change Research Network Initiating Workshop on Development of 2nd Assessment Report for Climate Change
- **107599** Climate Change and Water Adaptation Options

Question 2

The sample to answer this question includes only Research Projects, and totals 25 projects. Out of these, 15 are closed projects (including legacy projects) and 10 are active projects, which are substantially completed. The sample represents approximately 30% of the portfolio of research projects. The sample ensures proportionate representation of legacy and new projects, and is stratified to ensure representation across the program themes and regions in different project size ranges.

Q2 Sample

- **104150** Managing climate risks for agriculture and water resources development in South Africa
- **104347** Enhancing Capacity for Innovation, Increasing Productivity and Access to Markets by Peri-Urban Producer Organizations in Latin America
- **104396** Rainwater and Greywater Harvesting in Urban and Peri-Urban Agriculture in Ariana-Soukra, Tunisia
- **104397** Focus City - Integrated & participatory research aimed at reducing vulnerability, poverty and environmental loads in Cercado de Lima, Peru
- **104783** Land use change, biofuels and rural development in the La Plata Basin
- **104899** Participatory Improvement of Water and Sanitation Services in Tripoli through a Comparative Analysis with Irbid
- **105185** Assessing Multi-stakeholders partnerships in the Water and Sanitation Sector within the context of urban policies in LAC
- **105410** The RUAF "From Seed to table" (FSTT) programme in the MENA region 2009-2011: Strengthening urban farmers organisations and their marketing capacities
- **105515** Adaptation to the impacts of sea level rise in the Nile Delta coastal zone, Egypt
- **105524** Women's Rights and Access to Water and Sanitation in Asian Cities
- **105567** Enhancing resilience of rural communities to reduce impacts of droughts, floods and frost in the Mantaro Valley, Peru
- **105674** The Power of Collaborative Governance: Managing the Risks Associated with Flooding and Sea-level Rise in the City of Cape Town
- **105707** Water and Sanitation: LAC cities adapting to climate change by making better use of their available bioenergy resources
- **105721** Alternative Water Systems Project
- **105814** CCAA Legacy - Climate Change and Human Health in Accra, Ghana
- **105838** CCAA Legacy - Building Capacity for Sustainable Responses to Climate Change in Cities of Portuguese-speaking Small Island Developing States - KSIDS
- **105868** CCAA Legacy - Sub-Saharan African Cities: A Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action
- **106034** Understanding the cross-scale implications of forest and water management for adaptation-mitigation and food security in the Nepal Himalaya
- **106171** Economics of Climate Change Adaptation
- **106248** Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation
- **106298** Clean Energy and Water: An Assessment of Services for Adaptation to Climate Change
- **106487** Building research capacity to understand and adapt to climate change in the Indus Basin
- **106591** Improving food & livelihood security in Punjab through water-energy-agriculture management under climate change and variability

- **106594** Using Information and Communication Technologies (ICTs) to Address Water Challenges in Uganda
- **106601** Floods, Droughts and Farming on the Plains of Argentina and Paraguay: Adapting to climatic and hydrological changes in the Pampas & Chaco regions

Question 3

This question began with a core sample of 20 projects. Four of these projects were chosen because they were expected to have high policy impact AND were highlighted in the FPR. Another seven were expected to have a medium policy impact AND were highlighted in the FPR. Nine further projects were otherwise mentioned frequently in the FPR though not necessarily in the context of policy change.

A second set of 21 projects was chosen at random, avoiding those projects already selected and the newest projects (those approved in 2013 or 2014).

The overall sample includes both new and legacy projects, and both active and completed projects. It also has a reasonable balance across regions.

Time constraints made it impossible to include all sampled projects in the detailed review of external project documentation, especially the lengthy technical reports (not to mention the internal sources such as PCRs, PADs and monitoring reports). In the end, a sub-sample of 19 projects was selected for in-depth analysis. Those projects are indicated with an asterisk (*).

Q3 Sample:

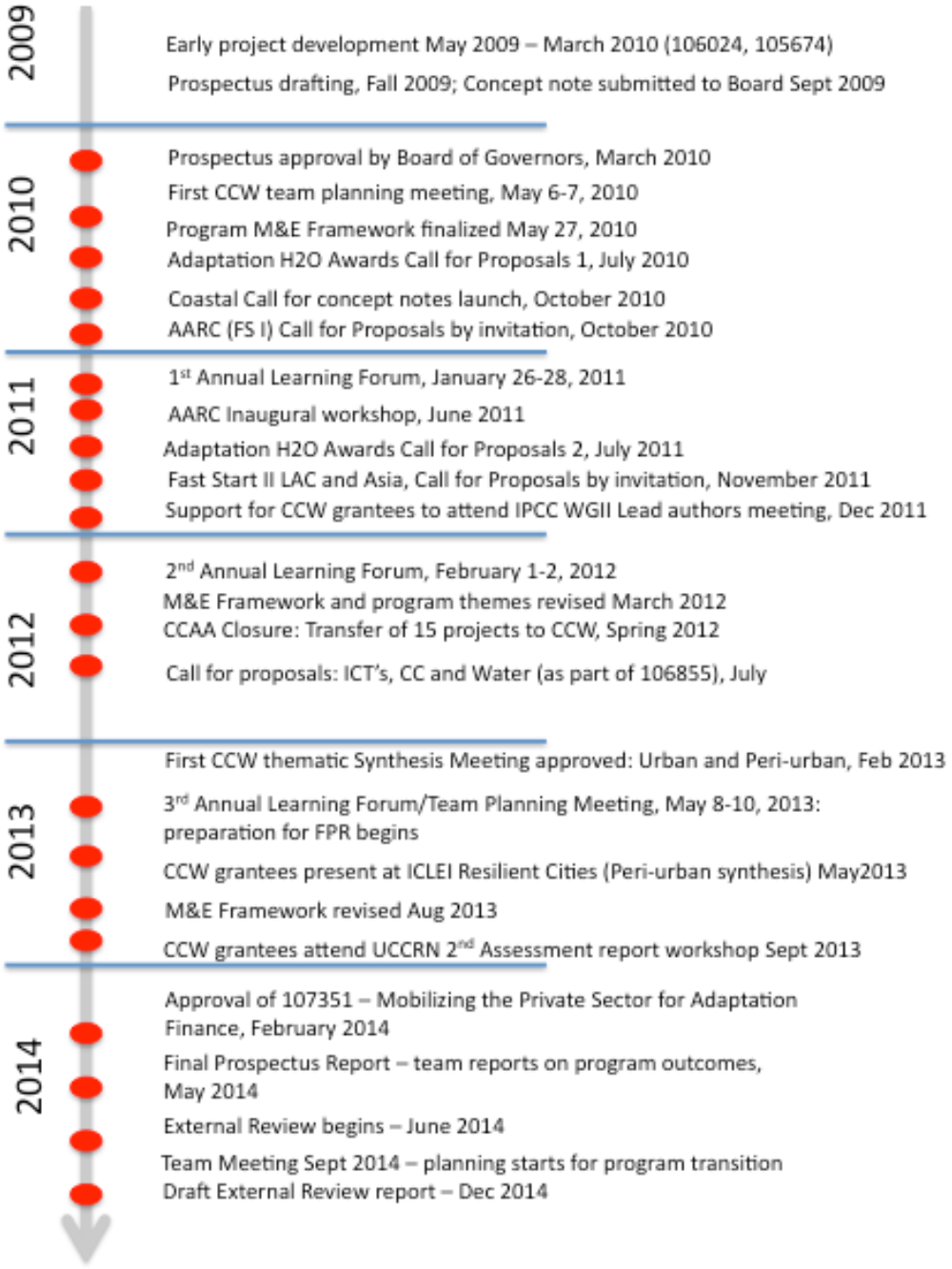
- ***104150** Managing climate risks for agriculture and water resources development in South Africa
- ***104397** Focus City - Integrated & participatory research aimed at reducing vulnerability, pove**rty and** environmental loads in Cercado de Lima, Peru
- ***104554** Developing strategies for adaptation of rural communities to climate change in the Ill**l**imani watershed (Bolivian Andes)
- ***104899** Participatory Improvement of Water and Sanitation Services in Tripoli through a Comparative Analysis with Irbid
- ***105410** The RUAF "From Seed to table" (FSTT) programme in the MENA region 2009-2011: Strengthening urban farmers organisations and their marketing capacities
- ***105515** Adaptation to the impacts of sea level rise in the Nile Delta coastal zone, Egypt
- ***105524** Women's Rights and Access to Water and Sanitation in Asian Cities
- ***105567** Enhancing resilience of rural communities to reduce impacts of droughts, floods and frost in the Mantaro Valley, Peru
- ***105674** The Power of Collaborative Governance: Managing the Risks Associated with Flooding and Sea-level Rise in the City of Cape Town
- ***105707** Water and Sanitation: LAC cities adapting to climate change by making better use of their available bioenergy resources
- **105719** Les Systèmes d'information géographique participatifs (SIG-P) pour une gestion durable des ressources naturelles et la sécurité alimentaire en Afrique
- ***105721** Alternative Water Systems Project
- **105815** CCAA Legacy - Protection de la communauté urbaine de Cotonou face aux changements climatique

- **105868** CCAA Legacy - Sub-Saharan African Cities: A Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action
- **105971** Synthesising learning on adaptation to climate change (umbrella project with four components)
- **106002** CCAA Legacy - Strengthening the Role of Civil Society in Water Sector Governance Towards Climate Change Adaptation in African Cities - Durban, Maputo, Nairobi
- ***106034** Understanding the cross-scale implications of forest and water management for adaptation-mitigation and food security in the Nepal Himalaya
- **106171** Economics of Climate Change Adaptation
- ***106248** Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation
- **106298** Clean Energy and Water: An Assessment of Services for Adaptation to Climate Change
- **106316** Strengthening Environmental Economics Capacity in Research on Climate Change Adaptation
- **106326** Building Capacity to Adapt to Climate Change in Southeast Asia
- ***106344** Adaptation to Climate Change and Equity in Rural Colombia: The Role of Water Governance
- ***106487** Building research capacity to understand and adapt to climate change in the Indus Basin
- **106548** AARC - Climate Change Adaptation Research and Capacity Development in Ghana
- **106549** AARC - Irrigation et information climatique au Burkina Faso: de la recherche au renforcement des capacités institutionnelles et communautaires
- **106550** AARC - From Research to Policy: Linking climate change adaptation to sustainable agriculture in Southern Africa
- ***106552** AARC - Enhancing Climate Change Adaptation in Agriculture and Water Resources in the Greater Horn of Africa
- ***106591** Improving food & livelihood security in Punjab through water-energy-agriculture management under climate change and variability
- **106594** Using Information and Communication Technologies (ICTs) to Address Water Challenges in Uganda
- ***106664** Agricultural Productivity and Climate Change in Arid and Semi-Arid Kenya
- **106703** Strengthening livelihood security and adapting to climate uncertainty in Chilika Lagoon, India
- **106706** Climate change and saltwater intrusion along the Eastern Mediterranean: Socio-economic vulnerability and adaptation
- **106707** Communicating climate change risks for adaptation in coastal and delta communities in Vietnam
- **106857** Climate Change Adaptation, Water and Food Security in Pakistan (Umbrella project with 3 components)
- **107081** FS 2 - Vulnerability and Adaptation to Climate Variability and Change in the Maipo Basin, Central Chile
- **107086** FS 2 - Adapting to Climate Change in Urbanizing Watersheds
- **107087** FS 2 - Inland Aquaculture and Adaptation to Climate Change in Northern Thailand
- **107088** FS 2 - Improving Water Governance and Climate Change Adaptation in Cambodia
- **107093** FS 2 - Water Resources and Adaptation to Climate Change in Vulnerable North China Plain and Poyang Lake Region in China
- **107096** FS 2 - Sustainable Water Management under Climate Change in Small Island States of the Caribbean

Survey Sample

For the survey of research partners, a separate sample of 84 research projects was selected from CCW's portfolio of 88 RPs. The sample amounts to all projects, minus awards and synthesis projects. The survey was sent to project leaders. Of the 84 e-mails sent, 3 were returned to sender.

Annex 5 – Timeline of the CCW Program's Evolution



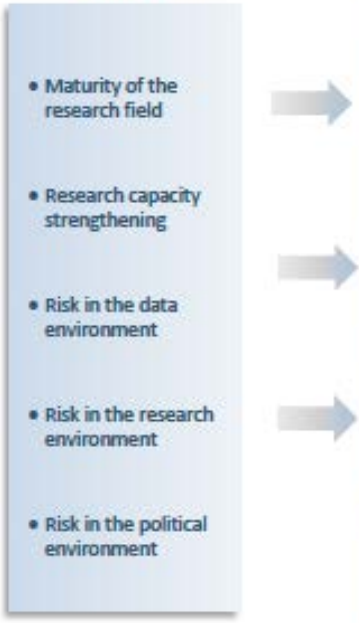
Annex 6 – Visualization of the RQ+ Framework

As outlined by Ofir and Schwandt (2014, p. 5), the RQ+ framework encompasses three components:

1. Key influences that have significant potential to effect the quality of research for development. These need to be taken into account as part of the assessment. [5 key influences assessed on a 3-point scale, where 1 = established/low focus/low risk; 2 = emerging/medium risk; 3 = new/high risk]

2. Dimensions and sub-dimensions that characterize research quality, as relevant in the context of IDRC-funded research for development.

3. Ratings on a scale defined by rubrics, to indicate the level at which a project performs per dimension or sub-dimension. [8-point scale, where 1-2 = unacceptable; 3-4 = less than acceptable; 5-6 = acceptable/good; 7-8 = very good]



QUALITY DIMENSIONS AND SUBDIMENSIONS	*Level 1:* Unacceptable	*Level 2:* Less than acceptable	*Level 3:* Acceptable /Good	*Level 4:* Very Good
1.0 Research Integrity				
1.1 Research integrity				
2.0 Research Legitimacy				
2.1 Addressing potentially negative consequences				
2.2 Gender-responsiveness				
2.3 Inclusiveness				
2.4 Engagement with local knowledge				
3.0 Research Importance				
3.1 Originality				
3.2 Relevance				
4.0 Positioning for Use				
4.1 Knowledge accessibility & sharing				
4.2 Timeliness & Actionability				

Annex 7 – RQ+ Aggregated Project Scores

		Maturity of the Field	Capacity Strengthening	Data Risk	Research Risk	Political Risk	Influence Score	Research Integrity	Addressing negative consequences	Gender responsiveness	Inclusiveness	Local knowledge	Originality	Relevance	Knowledge accessibility	Timeliness and actionability	Total Project Quality Rating	Mean Score Across Criteria	Performance Level (1-4)
Legacy Projects	104347	1	3	1	2	1	8	7	N/A	6	N/A	8	7	7	6	6	47	6.714	3
	104150	1	2	1	2	1	7	6	4	N/A	N/A	N/A	7	4	4	4	29	4.833	2
	104396	1	3	2	2	3	11	7	6	5	7	7	6	6	6	3	53	5.889	3
	104397	1	3	1	2	3	10	6	6	5	7	7	6	8	6	6	57	6.333	3
	104783	1	3	1	1	1	7	8	N/A	N/A	8	8	8	8	8	6	54	7.714	4
	104899	1	3	1	1	3	9	7	1	5	8	8	8	8	6	6	57	6.333	3
	105185	1	2	2	2	1	8	4	N/A	N/A	N/A	N/A	6	7	6	1	24	4.8	2
	105410	1	1	3	2	3	10	1	1	5	6	6	5	5	5	5	39	4.333	2
	105515	1	2	1	1	3	8	5	4	4	5	7	6	6	6	5	48	5.333	3
	105524	1	3	3	3	1	11	6	1	8	8	8	8	8	7	5	59	6.556	3
	105567	2	1	1	1	2	7	7	N/A	8	8	8	8	8	6	6	59	7.375	4
	105721	1	1	3	3	1	9	1	1	1	1	1	1	1	4	1	12	1.333	1
	105814	1	1	3	3	1	9	2	1	1	1	1	1	1	3	1	12	1.333	1
	105838	1	2	3	3	3	12	3	N/A	N/A	3	3	2	2	5	2	20	2.857	1
	105868	1	3	2	1	1	8	8	7	7	7	8	8	8	8	7	68	7.556	4
	Average	**1.07**	**2.2**	**1.87**	**1.93**	**1.87**	**8.93**	**5.2**	**3.33**	**5.5**	**5.8**	**6.27**	**5.8**	**5.8**	**5.73**	**4.27**	**42.5**	**5.29**	
New Projects	106298	1	3	1	2	1	8	5	N/A	N/A	N/A	6	6	6	6	1	30	5	3
	105674	1	1	1	1	2	6	7	4	4	5	6	6	7	7	6	52	5.778	3
	105707	1	1	1	2	1	6	7	6	3	6	6	4	7	6	4	49	5.444	3
	106034	2	2	2	2	2	10	4	6	6	6	7	7	7	6	6	55	6.111	3
	106171	2	2	3	1	2	10	5	7	4	5	7	6	6	5	5	50	5.556	3
	106248	2	2	2	1	2	9	4	4	5	4	6	4	7	6	6	46	5.111	3
	106487	2	2	2	2	3	11	7	5	8	7	7	7	7	4	6	58	6.444	3
	106591	2	1	1	1	1	6	6	4	N/A	5	6	5	7	4	5	42	5.25	3
	106594	1	1	1	1	1	5	7	5	5	8	8	5	7	7	5	57	6.333	3
	106601	1	3	1	1	2	8	8	6	N/A	N/A	6	8	8	5	6	47	6.714	3
	Average	**1.5**	**1.8**	**1.5**	**1.4**	**1.7**	**8.54**	**6**	**5.22**	**5.6**	**5.71**	**6.5**	**5.8**	**6.9**	**5.6**	**5**	**48.6**	**5.77**	

Level 1	3	12%
Level 2	3	12%
Level 3	16	64%
Level 4	3	12%

Level 1 = Unacceptable
Level 2 = Less than acceptable
Level 3 = Acceptable/Good
Level 4 = Very Good

Annex 8 – Different Versions of CCW Outcome Areas, By Source

We compared the phrasing and content of the three different Outcome Areas (OA) as presented in the original prospectus (OP), the final prospectus report (FPR), and the outcomes monitoring database (OMD). With very few exceptions OA were consistent across sources although highlighted sub-areas varied across sources.

Improvements in adaptive capacity and reduced vulnerability or risk were always located in OA1, though methods for understanding vulnerability were located in OA2 in the FPR. Methods improvement, multidisciplinary approaches, communities of practice and capacity building in all forms were located in OA2. Policy related outcomes were located in OA3.

Some observations regarding **vulnerability**: OA and OMD aimed at reduced vulnerability and risk as an outcome (OA1) while FPR focused more on methods for assessing vulnerability.

Some observations regarding water **availability**: OA and OMD aimed at improving water quality and availability as an outcome (OA1) but placed the closely related issue of improved water access in OA3. The FPR placed the more general "testing adaptations in the water sector" in OA1 and "practical solutions at the local level" in OA3.

"**Communicating** research results" was located by OMD in OA2 although this process is closely tied to policy influence, always located in OA3. FPR discussed communicating research results in several sections but linked it most closely to OA3.

	Original prospectus			**Final prospectus report**			**Outcomes monitoring database**		
Topic	OA1	OA2	OA3	OA1	OA2	OA3	OA1	OA2	OA3
Improvements in adaptive capacity									
Methods for understanding vulnerability									
Understanding vulnerability									
Reduced vulnerability or risk									
Multidisciplinary approaches									
Students involved in research projects/ training in research methods/ methods strengthened									
Methodological innovations in social and economic analysis									
Improved capacity in modeling									
Supporting an improved community of practice in adaptation									

Testing adaptations in the water sector									
Practical solutions at the local level									
Improvements in access to water									
Improved water quality and availability									
Communicating research results									
Influence methods used by policymakers									`
Integrate findings into policy through consultation									
Policies foster adaptation and flexibility									
Policy innovations/ options									
Policy engagement									
Research informed policy									
Policy impact									

Original Prospectus

In the original CCW prospectus, outcome areas were described by comparing a baseline with minimum, medium, and high levels of achievement for each OA. Outcome areas were not clearly labelled.

Outcome Area 1 – Support for research

Baseline: Research on climate change and water is disparate and largely driven by institutions in the North. Some good work in the South is starting to emerge particularly in Asia. Much research does not positively impact communities.

Minimum outcome: group of research projects supported by CCW are able to improve the quality and availability of water for the poor, reduce risk and/or affect change in policy in the face of climate change. Strategies to build adaptive capacity to such change are tested and understood. Bottlenecks to the uptake of existing technical and managerial options are identified.

High outcome: Improvements in adaptive capacity to climate change and a reduction in vulnerability to water stress at multiple scales, from small communities to larger sub-regions affecting a large population, are documented.

Outcome Area 2 – Capacity building

Baseline: Capacity of many researchers in the field of climate change and water to use methods – for vulnerability, social, gender, and economic analysis, is weak. The potential of social and natural science and of multi-disciplinarity to contribute to climate change adaptation is not realized.

Minimum outcome: The capacities of a number of researchers (min 15) to use key/pivotal methods – to conduct economic analysis, apply appropriate social research methods – to improve water management linked to climate change and to communicate research results are strengthened.

High outcome: Multidisciplinary approaches and methodological innovations in social analysis, water management and economic analysis are being used by, and influencing other research organizations and in some instances, policymakers.

Outcome Area 3 – Policy influence

Baseline: Policies and laws for water management are very supply focused and as of yet do not consider the likely impacts of climate change. Policies are also not flexible and very difficult to modify based on the changing environmental scenario.

Minimum outcome: Research leads to validated policy options that are communicated to potential users. Feasible strategies to improve water security in changing climate conditions are made available. Researchers are working closely with policymakers as a matter of practice.

High outcome: Improvements in access to water are evident as a result of policies put in place with support from CCW. Policies reflects the need to be adaptive/ flexible in the face of climate change.

Final Prospectus Report

Outcome area 1: Support for research. Research funded through the program improves the quality and availability of water for vulnerable communities, reduces risk, and builds adaptive capacity

Story 1: CCW research has helped to build adaptive capacity at the local level

- Improving our understanding of vulnerability
- Testing adaptation options in the water sector
- Building adaptive capacity at the local level

Outcome area 2: Capacity building. Improved capacity of researchers to conduct vulnerability, social, gender, and economic analysis in the field of climate change and water

Story 2: Our support has led to improved capacity of researchers to select and refine appropriate methods for adaptation research

- The need for better methods to assess vulnerability
- Addressing the economic impacts of climate change and the benefits of adaptation
- Enhancing capacity to conduct climate and hydrological modeling
- Supporting an emerging community of practice in adaptation

Story 3: Through our insistence on interdisciplinarity, many grantees are better at applied and relevant research

- Bridging across disciplines to generate stronger solutions
- Challenges to interdisciplinary/inter-institutional research

Outcome area 3: Informing policy. Researchers work closely with policymakers as a matter of practice and communicate their research results to potential users

Story 4: Our program has helped meet the demand for practical solutions

- Integrating findings into policy through consultation
- Practical solutions at the local level

Story 5: By insisting on stakeholder engagement, we have achieved more success in the uptake of solutions

- Challenges to 'influencing' policy and practice

Outcomes Monitoring Database

OA1

- Minimum: improved water quality and availability
- Minimum: reduced risks
- Minimum: assessing vulnerability
- Medium: improvements in adaptive capacity of communities/ institutions
- High: increased adaptive capacity at the regional or national level

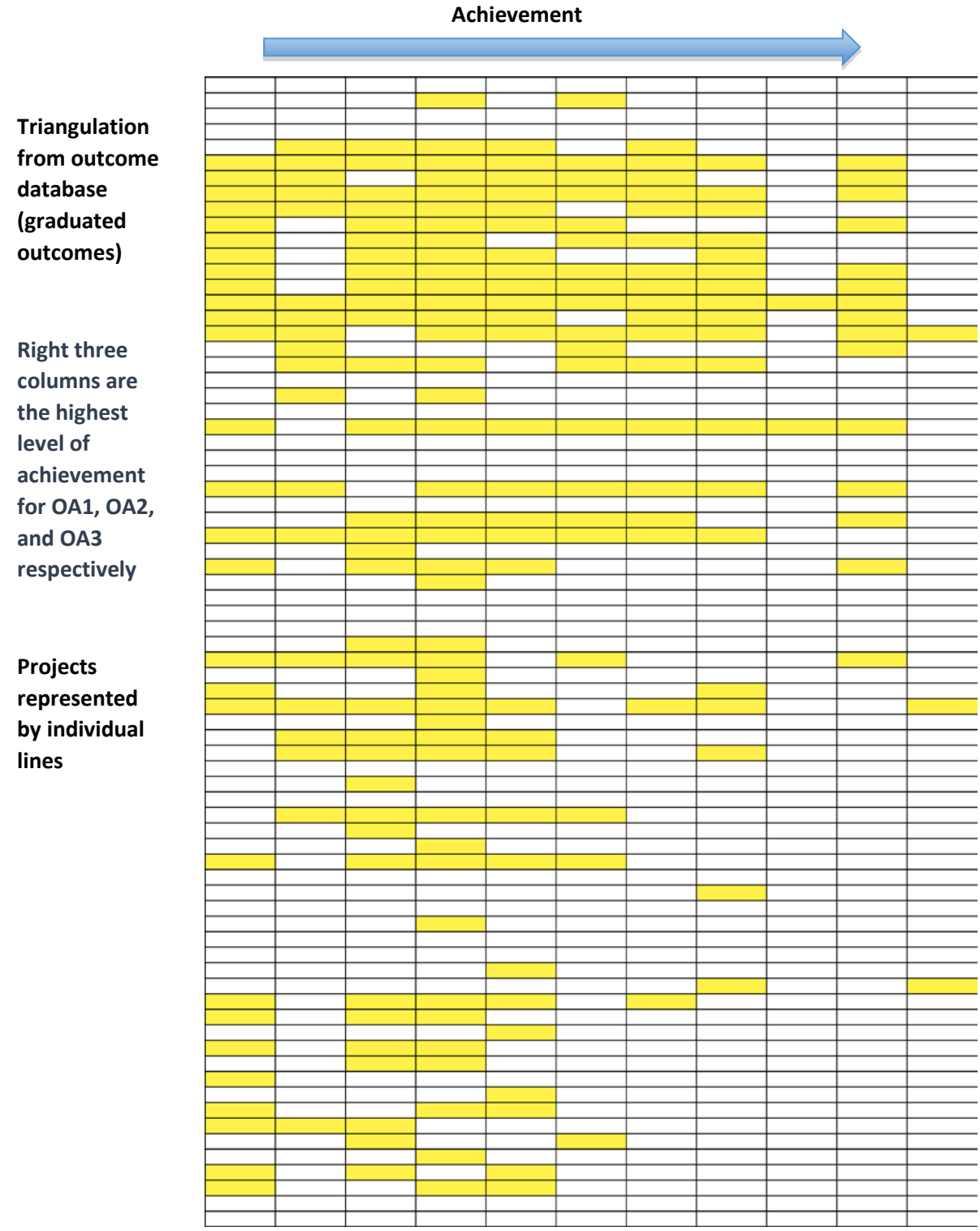
OA2

- Minimum: students involved in research project
- Minimum: communicating research results
- Minimum: research methods strengthened
- Minimum: training in research methods
- Medium: economic and social methods used
- High: methodological innovations

OA3

- Minimum: policy innovations
- Minimum: policy engagement
- Medium: research informed municipal policy
- Medium: research informed national policy
- High: policy impact

Annex 9 – CCW Outcomes Monitoring Database: Patterns of Graduated Outcomes by Outcome Area and Project



Annex 10 – Q3 Rubric with Project Scores

	104150	104397	104554	104783	104899	105410	105515	105524	105567	105674	105707	105721	106034	106248	106344	106487	106552	106591	106664	Mean
NA - insufficient detail to assess; 1 = weak to 4 = strong																				
Knowledge generation outcomes	4	3	3	2	NA	NA	4	4	3	4	4	3	4	2	4	4	3	2	3	**3.3**
Capacity building outcomes	2	3	3	3	4	NA	3	4	4	3	4	2	4	3	4	3	2	3	4	**3.2**
Change in policy or practice outcomes	1	4	2	1.5	3	4	2	2	4	3	3	1	2	2	4	1	1	1	3	**2.3**
Network weaving outcomes	2	3	3	NA	NA	NA	3	2	4	2	3	1	2	3	4	3	2	2	3	**2.6**
Project information used in engagement	4	4	3	3	NA	NA	2	4	3	4	3	1	2	4	4	2	3	2	3	**3.0**
Project information influenced KAS	NA	4	NA	1.5	NA	NA	3	2	2	4	3	1	3	2	4	2	2	2	2	**2.5**
Strength of contribution of project to outcomes	NA	4	2	1.5	NA	NA	4	2	3	4	NA	1	NA	3	4	2	2	2	3	**2.7**
Project information important relative to other sources	3	3	3	1.5	NA	NA	3	3	2	NA	2	1	3	NA	3	NA	2	1	2	**2.3**
Feedb/ learning from outputs or engagem't to res pr	3	3	1	NA	NA	NA	3	3	2	2	2	2	3	NA	2	2	3	2	1	**2.3**
Spatial or temporal coverage	4	4	4	3	NA	NA	4	1	3	4	3	1	3	3	4	3	4	2	3	**3.1**
Outcomes focused on problems (relevance)	4	4	4	2	NA	NA	4	2.5	3	4	4	1	4	2.5	4	4	3	2	4	**3.3**
Long term cc from near term variability issues (relevance)	4	2	4	2	NA	NA	4	NA	2	4	2	1	3	1	3	2	3	2	2	**2.6**
Generate value: payoff x likelihood x scale (signif)	4	3	NA	1.5	NA	NA	2	1	3	4	2	1	1	2	4	2	2	1	2	**2.2**
Institutionalization of CB - capacity erosion (significance)	3	3	NA	NA	NA	NA	3	NA	NA	NA	NA	1	NA	NA	3	NA	NA	3	3	**2.7**
Outcomes favor equity/ gender conseq (appropriateness)	NA	2	3	NA	NA	NA	2	4	4	3	2	NA	2	2	4	4	2	2	2	**2.7**
Not unduly influenced by power (appropriateness)	NA	2	2	NA	NA	NA	3	NA	NA	2	3	3	NA	NA	3	3	NA	3	4	**2.8**
Explicit or implicit TOC developed, used, adjusted	3	3	1	2.5	NA	NA	2	4	3	4	3	1	2	NA	4	2	2	2	2	**2.5**
Mean	**3.2**	**3.2**	**2.7**	**2.1**	**3.5**	**4.0**	**3.0**	**2.8**	**3.0**	**3.4**	**2.9**	**1.4**	**2.7**	**2.5**	**3.6**	**2.6**	**2.4**	**2.0**	**2.7**	**2.7**

Annex 11 – Q3 Document Review – Detailed Assessment

Assessment of CCW outcomes was guided by the ER Scope of Work (IDRC 2013) and the "Easter Egg diagram" that describes outputs, outcomes and impacts (IDRC 2014b; Ofir and Schwandt 2014). "Outputs" include publications and workshops that convey methods, tools, information and evidence developed through research. "Outcomes" include the influence of outputs on decision maker policy and practice, mediated through changes in knowledge, attitudes and skills, and complemented by increased capacity and communities of practice ("stronger fields"). "Impacts" are the effect of accumulated outcomes on well-being or other development performance criteria.

Outcome Areas

CCW specified graduated outcome areas (OA) as listed below (IDRC 2014a). Shorthand terms for OA are also used in parts of the Final Prospectus: OA1 = "support for research"; OA2 – "capacity-building" and OA3 = "informing policy".

- OA1: Research funded through the Program improves the quality and availability of water for vulnerable communities, reduces risk, and builds adaptive capacity
    - (High): Increased adaptive capacity at the regional or national level
    - (Medium): Improvements in adaptive capacity of communities/institutions
    - (Minimum): Assessing vulnerability, improved water quality and availability and reduced risk
- OA2: Improved capacity of researchers to conduct vulnerability, social, gender, and economic analysis in the field of climate change and water
    - (High): Methodological innovations
    - (Medium): Economic and social methods used
    - (Minimum): Research methods strengthened, training in methods, student participation, research communication
- OA3: Researchers work closely with policymakers as a matter of practice and communicate their research results to potential users
    - (High): Policy impact
    - (Medium): Research-informed municipal or national policy
    - (Minimum): Policy innovations or policy engagement

We find several interrelationships among outcome areas. Improvements in water quality and availability and reductions in risk (OA1) are most likely to come from changes in policy or practice (OA3). Research – driven changes in policy or practice (OA3) are most likely to occur when capable researchers use suitable tools and methods (OA2) to produce information useful to decision makers. Research is more likely to influence policy and practice in ways favorable to climate change adaptation (OA3) when research is based on a foundation of a good understanding of vulnerability and social, gender and economic issues (OA2). Stronger adaptive capacity (OA1) helps communities take advantage of policy innovations (OA3) or adapt to evolving circumstances even in the absence of policy change.

Outcomes have both intrinsic value and instrumental value. For example, capacity strengthening is intrinsically valuable but is also valuable insofar as it increases the likelihood that research outputs will be useful as evidence when engaging with decision makers.

Relevance

Assessing the relevance of CCW outcomes means assessing the extent to which they are relevant to challenges related to climate change and water, given the maturity of the Program and the research priorities chosen. The CCW Program states that "Adaptation research is a very young field, where the measurement of adaptive capacity – the ability of a system to adjust to climate change – is still being debated" (IDRC 2014a). Research priorities are reflected in Program themes which include water and agriculture (27%), urban and peri-urban (15%), disaster risk reduction (13%), coastal zones (12%), . . . mountain zones (5%), and water governance and management (18%) (CCW 2014).

In brief, CCW is a relatively new Program that covers a multiplicity of themes and that has been assigned to work in a young field where performance measures are still being debated. Taken together, these factors create substantial obstacles to getting to outcomes during the Program's life span. That the Program has been able to demonstrate substantial outcomes across all outcome areas despite these difficulties is a credit to the Program team.

Significance

Significance is defined as the extent to which Program outcomes are, or are positioned to be, important contributions to decision-making on policy and practice, taking account of the research field and / or the actors involved, relative to expectations for the Program (IDRC 2013). In this sense, "importance" focuses on whether outcomes have demonstrated, or are positioned to demonstrate, favorable economic returns with favorable distributional consequences, including those related to gender. An outcome taking the form of a change in policy or practice that has led or will lead to large and widespread benefits to suitable social groups over large areas in a reasonable time frame is in this sense more "important" than an outcome that has led or is positioned to lead to negligible benefits for small populations over an indefinite time frame. Note that significance is to be interpreted in terms of a trajectory leading to future outcomes as well as an ex post assessment of past outcomes.

We used several sources in assessing CCW outcomes areas.

- Self-reported outcomes by project and OA from the Outcomes Database
- ER panel scoring of outcomes for sample projects using the appropriate assessment rubric
- Survey of project leaders regarding relevance and significance of outcomes

We selected a sample of 19 CCW projects and assessed each for several dimensions related to relevance and significance of outcomes. For each of several dimensions, we assigned a score from 0 (worse) to 4 (better). Mean scores across projects indicate cross-project performance with respect to a particular dimension. A summary view of scoring is shown in Annex 2. However, individual scores are considered less important than patterns across projects and across dimensions. In the following sections, we draw on Annex 2 and supporting documents to respond to particular questions regarding the relevance and significance of outcomes.

Findings regarding the relevance and significance of outcomes

The CCW Program has developed an Outcomes Database that summarizes the contribution of each project to each OA. A summary view of this Outcomes Database is provided in Annex 1. This summary shows that a large proportion of projects have produced outcomes in one or more OA. The incidence of outcomes is larger for older projects than for newer ones; nonetheless, even newer projects show substantial progress towards outcomes. Projects tend to be linked to either multiple outcomes or no outcomes at all. This is probably an artefact of reporting, and can be considered as measurement error.

Our review of a sample of entries in the Outcomes Database indicates that it is accurate and helpful as far as it goes. When comparing project documentation with Outcome Database entries, however, we found that important issues were either missing or not fully explored.

To properly assess the relevance and significance of outcomes, we found it necessary to take a closer look at some of these issues, among them:

- "relevance" to climate change and water
- climate change vs. seasonal unreliability
- keeping perspective in designing adaptation strategies
- climate change as one driver among many
- multiple-topic projects with uneven progress towards outcomes
- defining problems that may have no solution
- balance among Outcome Areas
- positioning for use and influence factors
- unfavourable policymaking environment
- monitoring autonomous adaptation processes vs. developing adaptation strategies
- explicit vs. genetic influence strategies
- policy change, power and mandates
- outcomes and economic returns (generating value)
- spatial and temporal distribution of outcomes
- gender, equity and unintended consequences
- innovation trajectories and continuity strategies
- network weaving and institutional sustainability
- feedback to research and learning how to learn

Relevance to climate change and water:

Sampled projects were fairly evenly distributed among those that focused squarely on climate change and water, those indirectly linked to these topics, and those with no discernible relevance to them.

Several projects focused squarely on climate change and water. One example is project 105515 (Nile Delta coastal zone)[1] which assessed vulnerability and hazards of climate change driven problems of sea level rise, salt intrusion, etc. and developed suitable adaptation strategies (Abdrabo 2012). Other projects with a similar direct focus include 104150, 104554, 105674, and 106552.

A number of projects were only indirectly linked to climate change and water. Typically, these explored the causes and consequences of drought or flooding events, understanding that the frequency and severity of these events might be influenced to an unknown degree by climate change. For example, project 106487 (Indus floods research project) aimed to understand the consequences of occasional major flooding in the Indus Basin, assuming that climate change processes "may" increase flooding frequency or severity (Khan et al. 2013). Other projects with a similar indirect focus include 104397, 105567, 106034, 106344, 106487, 106591, and 106664.

Finally, a number of projects had no discernible relationship to climate change and water. This is likely due to their having been planned before the establishment of the CCW Program. An example of this kind of

[1] A list of project numbers, full titles and the abbreviated titles used in this section is given in Annex 4

project is 104783 (Land use in the La Plata Basin) where land use changes were driven by market conditions and policies, and amelioration of soil degradation (unrelated to climate change) focused on conservation agriculture and zero tillage practices (Coutinho and Balieiro nd). Other projects with little relevance to climate change and water include 105524, 105707, 105721, and 106248.

Climate change vs. seasonal unreliability:
CCW is aware that climate change and improvements in adaptive capacity are long term processes which are difficult to study in a short term program. For this reason, the Program has sought to focus on two key questions: "(1) how can immediate short-term threats be reduced within the context of longer-term climate change? (2) what existing adaptation strategies are both socially and economically feasible, and make for wise longer-term investments?" (IDRC 2014a). These are compatible with the Program's "no regrets" policy.

Sampled projects were divided fairly equally among those focusing on near-term seasonal unreliability as a proxy for climate change, those focusing on long-term climate change as such, and those unrelated to either climate change or seasonal unreliability.

Examples of projects focusing on seasonal unreliability include 106664 (Semi-arid Kenya) and 106591 (Water management in Indian Punjab). Both projects chose to work on near-term issues because of delays in climate model downscaling. In both cases, research attention reverted to fairly traditional innovations such as crop rotations and water harvesting (Kenya) and groundwater irrigation management (Punjab), about which there has been abundant past research and where a likelihood of a new breakthroughs seems small (reducing the likely significance of research). Other projects focusing on seasonal unreliability include 104397, 104783, 105707, 106344, 106487, 106591, and 106664.
As noted above, projects focusing directly on climate change and water include 104150, 104554, 105515, 105674, 106034, and 106552. Projects unrelated to either climate change or seasonal unreliability include 105524, 105567, 105707, 105721, and 106248.

Keeping perspective in designing adaptation strategies:
We found instances where projects had difficulty in keeping perspective when designing suitable adaptation strategies. Continuing with the 106664 (Semi-arid Kenya) example, project staff recognized that "[climate model] downscaling is important because it offers assessments of the implications of . . . likely future climatic scenarios on key livelihoods e.g. crop production in the project areas."(Wamuongo 2014). Unfortunately "due to the need to build capacity in climate downscaling . . . the team had to alter the sequencing of the methodology and undertook interim risk/impact assessments with rainfall and temperature data from KMD, ICPAC and KARI field sites to guide adaptation choices instead of waiting for the results of the downscaling exercise" (Adera 2013).

The project ended up selecting as adaptation strategies fairly traditional crop management technologies including crop-legume intercrops with or without soil ripping; combinations of organic and inorganic fertilizers; cropping system diversification, introduction of improved fodder grasses, and water harvesting strategies such as in-field zäi pits. There is a long history of research – including research on factors governing adoption – on all of these: crop-legume intercrops (Kumwenda et al. 1996); soil ripping (Thierfelder et al. 2013); combinations of organic and inorganic fertilizers (Waddington et al. 1998; Cooper et al. 2008); improved fodder (Mpairwe et al. 2008) and even water harvesting strategies (Zougmoré 2003). Zäi pits have a well-known history in Burkina Faso that goes back decades.
Perhaps more important is the risk that the above adaptation strategies may miss the main point altogether. They deal with soil fertility and soil moisture under conditions of seasonal unreliability of

rainfall. However, these may not be the right threats. There was a one-sentence hint of this in a project technical report that drew on climate modeling, as follows:

> "*Regarding the projected temperatures, the models show an increased mean annual surface temperature of 0.6% by 2030, 2.1% in 2050 and 3% by 2080 (Table 13). This temperature increase is as a result of the increased greenhouse gases emitted in the atmosphere and is in agreement to the global projected temperature changes. The rise in temperature will definitely have significant impacts to the agricultural activities in the region. A 3 degree mean temperature rise will be sufficient to wipe away all the C4 family of crops and it is therefore a serious threat to food security of the region*" (Wamuongo 2014).

The main C4 crop in Kenya, of course, is maize. What they are saying is that maize itself could disappear as a food crop because of temperature rise. This would indeed be a "serious threat to food security" if not a downright disaster – but adaptation strategies do not have this as a central focus. Selection of adaptation strategies, then, has implications for the relevance and significance of project outcomes.
Curiously, another project using modeling to explore climate change consequences for cropping systems in Kenya 106552 (AARC - Greater Horn of Africa) concluded that maize yields in Kenya would increase, not decrease (KARI et al. 2014). It is not clear why the two projects reached such different conclusions.

Climate change as one driver among many:
Projects were divided in their ability to separate climate change from other external drivers of change and innovation. Much of the work of project 105515 (Nile Delta coastal zone) focused on problem definition (sea level rise scenarios, inundation, shoreline change, changes in aquifer characteristics, saltwater intrusion, inland movement of saltwater to aquifers, and the spatial incidence of each dimension of vulnerability. However, these were assessed in the context of other external drivers, for example, demographic change and migration (Abdrabo 2012). Similarly, the modeling approach used in project 106552 (AARC - Greater Horn of Africa) allowed it to separate out climate change drivers from other drivers (this work is possible in principle but was not carried out in the context of this particular project) (IDRC 2012).

In contrast, project 104554 (Climate Change in the Andes of Bolivia), assessed on-going autonomous adaptation strategies to changes in water availability but failed to recognize that these strategies were driven by many other factors, among them prices, market opportunities, changes in the structure of demand, growth in water demand, demographics, etc. (Agua-Sustentable 2012).

We were unable, however, to draw general conclusions on this question. For many projects it was difficult to determine the extent to which teams explicitly incorporated multiple drivers in their analysis.

Multiple-topic projects with uneven progress towards outcomes:
It would seem sensible to assume that most CCW projects focus on a well-defined topic or issue, with related research outputs and output-based engagement strategies with decision makers to foster changes in policy and practice. Sometimes, however, projects worked on multiple topics that are only loosely related. In these cases it is not uncommon to see work on one topic progressing smoothly while work on other topics lags behind. In such cases, outcomes from work on one topic may have levels of relevance and significance that are substantially different than for other topics in the same project.
For example, one such project is 106591 (Water management in Indian Punjab). (This project is mentioned favorably in the Final Prospectus Report as one that "helped to improve people's access to water".) The

project covers several topics, all related to groundwater depletion: a climate and weather forecasting and application platform for decision support (Devineni et al. nd); cropping system diversification to manage water stress and improve resilience (Sidhu and Vatta 2014a); evidence-based energy pricing reform (Sidhu and Vatta 2014b) and water-saving improvements in rice irrigation, for example laser levelling of fields, or irrigation schedules based on soil moisture (as measured by tensiometers) (Vatta 2013).

Of these, it appears that only the latter topic will make enough progress to get to outcomes during the course of the project. Work on other components lags behind (MacAlister 2013). The irony is that work on water-saving scheduling of rice irrigation has a history that dates back decades. IRRI and PAU have worked on direct sowing of rice since the 1970s. Laser levelling in Punjab through the Rice-Wheat Consortium began in the1990s (Hobbs and Morris 1996) and is now mainstreamed throughout India. Project reporting ignores the major breakthroughs in energy policy and groundwater pumping made recently by Tushaar Shah and colleagues in India and at IWMI (Shah et al. 2008).

The relevance and significance of actual or expected outcomes, then, depends on which of a project's several topics you are talking about. In the example above, the relevance and significance of outcomes related to irrigation scheduling are likely to be modest, though this is the topic where the project has made most progress. In contrast, the relevance and significance of breakthroughs on energy pricing reform could be enormous, but this is where the project progress lags behind – especially when compared to alternative suppliers of relevant research.

Defining problems that may have no solution:
Most CCW projects did focus on climate change adaptation and adaptive capacity. A few, however, focused on defining climate change related problems but had little to say about strategies for adaptation. One example is project 106487 (Climate change in the Indus Basin) which explicitly stated that it aimed to improve understanding of the causes and consequences of major flooding in the Indus Basin without, however, trying at this time to influence policy and practice. This was attributed to the brevity project, and it was pointed out that this project's work provides a strong foundation for subsequent work on flood vulnerability and flood control measures. Even project participants viewed this as one component of a longer term effort (IDRC 2012). Ultimately this influences the probability of adoption of adaptation strategies developed by a project, one factor in assessing economic returns.

Balance among Outcome Areas:
Assessment of a sample of CCW projects indicates that they were quite successful in generating information (OA1) and in building capacity (OA2) but somewhat less successful in fostering changes in policy and practice or in weaving networks ("strengthening fields") (OA3). This is not surprising and was anticipated by the Program which emphasized the importance of whether a project is positioned to contribute to subsequent changes in policy or practice. This is further discussed in subsequent sections on "positioning for use and influence factors" and "innovation trajectories and continuity strategies", among others.

Positioning for use and influence factors:
An important question is why some projects performed better than others in being positioned for use to influence in policy and practice. Possible explanations for lack of influence include:

1. Unfavorable policy making environment
2. Focus on monitoring autonomous adaptation processes rather than designing innovative adaptation strategies

3. Inadequate engagement with policymakers
    a. Project brevity
    b. Explicit vs. generic influence strategies
    c. Selection of next users/ target audiences (see section on "policy change, power and mandates")
4. Questions of importance to policymakers not addressed (lack of relevance)

Evidence at hand suggests that that factor 1 was only sometimes important; that factor 2 was usually not important; and that factors 3a and 3b were usually quite important. We were unable to judge the importance of factor 3c. Factor 4 was discussed separately under "relevance".

Unfavourable policymaking environment:
Several projects encountered national political situations that constrained progress in policy change. For example, project 105515 (Nile Delta coastal zone) found that policy making in Egypt was paralyzed and that decisions on policy and practice were for the most part not being taken – but that project did at least make progress in broadening the general awareness regarding climate change, the associated vulnerabilities to climate change, the methods needed to develop an action plan, and the policies needed to implement such actions. This is likely to help future activities and investments in climate change adaptation. Project 106487 (Indus floods research project) was unable to actively engage with policymakers because of the brevity of the project and because of political difficulties within the country (IDRC 2012).

Project 106664 (Semi-Arid Kenya) was designed to work closely with policymakers but had trouble achieving this in practice. This project and project 106591 (Water management in Indian Punjab) both emphasized change at the farm level, with engagement and capacity building focused on farm cooperatives as well as students. There was less engagement with officials charged with energy policy. Project 106552 (AARC - Greater Horn of Africa) made preliminary contacts with policymakers in at least two countries but considerable follow-up remains to be done (KARI et al. 2014).

Monitoring autonomous adaptation processes vs. designing adaptation strategies:
Most projects worked consciously towards the development of innovative adaptation strategies (regardless of whether or not they were explicitly focused on climate change and water). However, there were some projects that preferred to monitor autonomous adaptation processes, where changes in policy and practice are brought about by other drivers and are independent of research outputs. (These projects nonetheless contributed to knowledge generation and capacity building.)

An example of the first category is project 105515 (Nile Delta coastal zone) which has played a major leading role in generating information, awareness and capacity regarding sea level rise and climate change. Similarly, project 106487 (Indus floods research project) has made very substantial progress in understanding the causes and consequences and adaptation strategies for major floods. Other projects in this category include 104150, 104397, 105515, 105524, 105674, 105707, 105721, 106248, 106344, 106487, 106552, 106591, and 106664.

Examples of the second category include project 104554 (Climate Change in the Andes of Bolivia) where emerging adaptation strategies for changing water availability are autonomous and are not driven by the adaptation strategies and decision support system developed by the project. Another example is 104783 (Land use change in the La Plata Basin) that portrays conservation agriculture and zero tillage as adaptation strategies for land degradation associated with changing land use. Conservation agriculture and zero tillage, of course, have a long history in Brazil, going back to the 1960s, and policymakers in that country have long

shown strong support for these practices (Landers 2001). Projects in this category include 104554, 104783, 105567, and 106034.

Explicit vs. generic influence strategies:
The value generated by a project can be enhanced through the use of explicit strategies for employing project outputs to engage with decision makers in ways that influence their knowledge, attitudes and skills regarding climate change, vulnerability and adaptation, and in this way directly or indirectly influence their decisions (Alvarez et al. 2010). These are sometimes called "outcome logic models" (Douthwaite et al. 2007). In the CCW Program these were sometimes referred to as influence strategies.

CCW projects showed substantial variability in the extent to which systematically used outcome logic models or similar kinds of explicit influence strategies. Projects that performed better in this regard include 104150 (Managing climate risks in South Africa), which at least attempted to develop an outcome mapping framework; 104397 (Focus City - Lima, Peru) with a work plan that included outcome mapping and a next user strategy; 106344 (Water governance in rural Colombia); and 106552 (AARC - Greater Horn of Africa). Note however that this project developed on a generic influence strategy for unknown and unnamed "next users" (SUA 2011). Many other projects used relatively vague references to outcome targets or engagement strategies.

Policy change, power and mandates:
In encouraging policy change for climate change adaptation, it pays to know who has the authority and mandate for appropriate policy development and implementation (Sullivan et al. 2014). Sometimes authority is spread across multiple institutions. At other times, the institution with authority may not be readily accessible to the project. When the project finds that it cannot engage with decision makers who truly have the mandate and authority, it must work with other "next users" who will continue with policy engagement after the project itself has closed.

At times it is difficult to know whether a CCW project is engaging with policymakers from the institution with the appropriate authority and mandate, or if they are engaging with "next user" institutions.

For example, one project that was mentioned frequently in the 2013 Annual Learning Forum (Lamond 2013) was "104397 – Focus City - Lima, Peru". This project was assigned a "medium" score in OA3, for "informing policy" regarding strategies to alleviate flood damage in Lima. This was because the "risk management approach adopted in the master plan for . . . Lima emerged from the strategic plan for the reduction of vulnerability developed by this project". This decision was taken by the Director of the Metropolitan Institute of Planning (MIP) (Ubal Giordano 2012).

However, is the MIP the right partner institute? Does it have the mandate, authority and responsibility to take sweeping decisions called for in the risk reduction strategy, or must it coordinate and convince other municipal authorities?

Some local strategies to alleviate flood damage are at the household level: breaking fences to allow floodwater discharge and improving the construction of houses. Other strategies are at the community level: early warning systems; building ditches; cleaning gutters and drains; refilling/levelling of roads; limiting construction close to natural drainage; and even relocating people if necessary (Barrantes and Piselli 2012; IDRC nd). Some of these strategies are likely to be resisted by local homeowners – does the MIP have the authority to enforce its policies? If not, who does, and how does MIP influence other urban policymakers and decision makers?

It would seem likely that urban politics, elections and other pressures might influence which vulnerability reduction strategies are ultimately used, and therefore who is negatively affected. Power relations may interact with institutional mandates to steer risk reduction strategies into unexpected and possibly undesirable directions – long after the project itself has closed.

For the purposes of continuity and sustainability, it is important that CCW know whether in this case MIP is the main decision making authority or if it is a "next user" with the responsibility of conveying research outputs to additional institutions. Without this knowledge, it is difficult to assess the relevance and significance of outcomes from this project – or needs for explicit continuity strategies.
This principle applies in general to most CCW projects.

Outcomes and economic returns (generating value):
This section discusses value generated through OA3 (changes in policy and practice) and to a lesser extent OA1 (changes in water availability or risk). Capacity building (OA2) and information generation, for example, on understanding vulnerability (OA1) also have "intrinsic value", apart from their "instrumental value" in fostering change in policy and practice, and in changes in water availability and risk. These intrinsic values are not included in this discussion.

Assessing the value actually/potentially generated by project-developed outcomes has many components:

- the magnitude of the livelihood improvement per person or unit area affected
- the number of people or area affected
- the trajectory over time of adoption of a change in policy or practice
- the likelihood of future adoption or change in policy or practice
- the extent to which changes can be indirectly or directly attributed to project activities

Assessed in this way, outcomes that clearly generated/ will generate substantial economic returns are the exception rather than the rule. This was in part due to some projects monitoring autonomous adaptation processes rather than developing innovative new adaptation strategies. It was also due to a finding that for some projects, the "magnitude of the livelihood improvement per person or unit area affected" was low. For example, project 105515 (Nile Delta coastal zone) identified alternative adaptation strategies to sea level rise and related problems, but economic analysis found that the economic returns for many of these are likely to be negative. This is in itself important information.
For those projects actually attempting to assess the economic returns to adaptation strategies, much depends on the assumptions used in the economic models. For example, project 106552 (AARC - Greater Horn of Africa) found that adaptation strategies for rainfed cropping systems were likely to be profitable – but assumed (likely unrealistic) adoption levels for input use and of improved soil water management strategies (KARI et al. 2014). Economic analysis of adaptation strategies in Pakistan for project 106487 (Indus floods research project) is particularly difficult because of the potential large payoff to adaptation strategies if adopted, the low probability of actual adoption, and the uncertainty regarding the frequency and severity of future flooding events.

Other projects for which probability of adoption of adaptation strategies seems low are 105524, 105721, 106248, 106487, 106552, 106591, and 106664. Low probability of adoption combined with high payoff if adoption occurs makes it difficult to assess value of adaptation strategies. Moreover, this ignores the role of projects as one step in a learning process with a longer trajectory that ultimately leads, in an expected

manner, to successful adaptation strategies. This is not "positioning for use", but rather "positioning for the next necessary step in research that ultimately leads to use".

Spatial and temporal coverage of outcomes:
The spatial and temporal coverage of outcomes tended to be relatively good across projects. Many projects incorporated modeling of future processes and consequences of climate change and linked these to spatial models.

Gender, equity and unintended consequences:
Projects were divided among those dealing effectively with gender and equity issues, especially in terms of negative externalities, and those that were less effective. For example, in project 105515 (Nile Delta coastal zone), adequate attention was paid to externalities and equity consequences of different adaptation strategies to sea level rise. Consequences for the poor were highlighted. Outside of general equity consequences, however, there were fewer gender-specific assessments. Project 106487 (Indus floods research project) was particularly effective in its analysis of the gender dimensions of vulnerability and adaptation to severe flooding events (Ahmed & Redwood 2014).

Project 106552 (AARC - Greater Horn of Africa) used gender disaggregated data collection but apparently did not explore gender specific consequences of adoption of adaptation strategies (KARI et al. 2014). Similarly, project 106664 (Semi-arid Kenya) used procedures for gender sensitive data collection, but results regarding performance of improved crop management technologies are not gender disaggregated re technologies. Among other things, not much was said about herder/farmer conflicts. Farm-level research on irrigation management in project 106591 (Water management in Indian Punjab) is likely to be most benefit to large farmers, though to its credit, the project is making substantial efforts to reach small farmers through cooperatives.

Among projects with good attention to gender and equity issues are 104554, 105524,105674, 105707, 106344 and 106248.

Innovation trajectories and continuity strategies:
Because CCW projects deal with complex, long-term issues, with multiple stakeholders, in relatively short-term projects, it seems unlikely that the full value of project contributions will emerge during the course of the CCW Program as such. The value generated by outcomes will emerge during the future course of innovation trajectories, building on project and Program achievements. The best way to increase the likelihood that past CCW investments will produce future value is to plan for explicit continuity strategies, whereby new champions undertake to carry forward and perhaps sponsor follow-on research, building on the foundation laid by CCW. We are not aware that a conscious and systematic effort has been made to construct or develop such continuity strategies. Without them, much of the value of past investments may be lost.

For example, in project 104554 (Climate Change in the Andes of Bolivia) the question arises of who will take charge of the further development and use of the decision support system based on adaptation strategies developed by the project? Similarly, in project 106552 (AARC - Greater Horn of Africa), much effort has gone into capacity building in DSSAT and APSIM model validation and use, however it is not clear who will take the lead in carrying on this work to take further modeling outputs in future engagement with policymakers. As noted above, a continuity strategy building on the foundation laid by project 106487 (Indus floods research project) is essential if that project is to contribute to policy and practice outcomes.

Network weaving, field strengthening, and institutional sustainability:
There is a specific role in innovation systems for "network weavers". These are individuals or institutions that facilitate connections among potential network members to accelerate the flow of innovative ideas and ease the process of learning selection. Once network members have come to develop multiple links with each other, the key role of a network weaver becomes less important and can fade away (Douthwaite 2002; Victor et al. 2014). "Network weaving" takes isolated research endeavors, helps link them together and then facilitates a transition to a robust multi-faceted and self-sustaining network. Research outcomes are more likely be relevant and significant when supported by a multi-faceted network of partners, companions and members of a "community of practice".

The CCW Program has had mixed success in taking on the role of "network weaver". Project 104554 (Climate Change in the Andes of Bolivia) is often cited as a good example of a new approach to research coordination, featuring collaboration between local universities and NGOs and suitable links with policymakers. This is fine during the life span of the project but who will serve as network weaver after the project finishes? This should be planned for as part of a continuity strategy. In the case of project 106664 (Semi-arid Kenya) it seem likely that CCFAS or national partners such as KARI are more suitable for the role of network weaver. For project 106552 (AARC - Greater Horn of Africa) network weaving might be left with CORAF or FANRPAN. For project 106591 (Water management in Indian Punjab) the project is unlikely to play an important role in network weaving but the lead institution, Punjab Agricultural University, is in a good position to do so possibly through a convincing continuity strategy.

Feedback to research and learning how to learn:
A principal use of CCW research outputs is to inform engagement with stakeholders to influence their knowledge, attitudes and skills, and ultimately their decisions on questions relating to climate change adaptation. As such the CCW Program is a good example of a research for development (R4D) program. R4D has been described as having two components: (1) "an engagement process for understanding and addressing development challenges defined with stakeholders . . ." and (2) "continuously learning how to do this". That is, R4D fosters evidence-based innovation and at the same time invests in "learning how to learn" about fostering innovation and change. (Hall 2013).

In R4D, outputs and corresponding outcomes are used re-examine and update research priorities. As initial questions are answered, new ones emerge. And as decisions are taken by stakeholders, the policy or institutional environment may shift such that new researchable issues come to the fore. This leads to a feedback-driven evolutionary process for research to meet shifting development challenges.

To what extent has CCW taken a feedback-driven evolutionary approach to R4D? The Program has done reasonably well in this area (score = 3.0 out of 4.0) with many good examples of feedback to research.

For example, project 104150 (Managing climate risks in South Africa) emphasizes the development and demonstration of quantitative and qualitative tools and methods to conduct integrated assessments of adaptation decisions vis-à-vis climate change and climate variability and to develop the capacity within Africa to use these tools. It examines one set of climate change adaptation scenarios but capable people using updated versions of these tools can explore new strategies that reflect updated priorities. Project 104397 (Focus City - Lima, Peru) worked on strategies related to flooding risk that affects certain riverside areas in Lima. Their methods and the risk management strategy they developed have been integrated into the disaster management approach in the master plan for the city of Lima. Whether feedback from research

outputs and associated outcomes will be used to update research priorities now lies in the hands of municipal authorities.

References

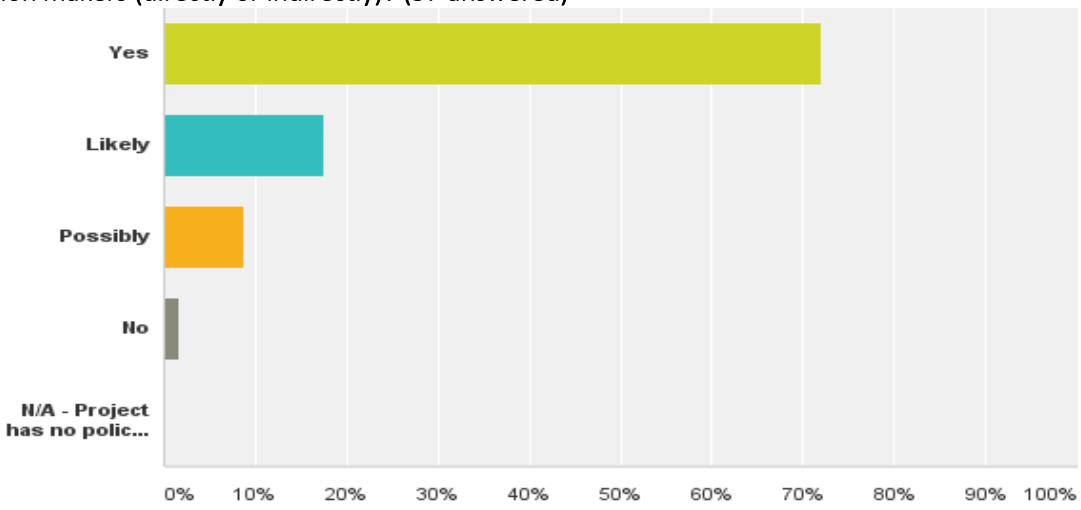
See reference list in Annex 2.

Annex 12 – Results of Survey of CCW Research Partners

Sent to 84 partners, 3 e-mails returned to sender, 57 responded (70% of the 81 received)

Q1-Q2: Respondents' project information (Not included)

Q3: In your opinion, has or will information generated by your project influence policy or the practices of decision makers (directly or indirectly)? (57 answered)



Answer Choices	Responses	
Yes	**71.93%**	41
Likely	**17.54%**	10
Possibly	**8.77%**	5
No	**1.75%**	1
N/A - Project has no policy or practice relevance	**0.00%**	0
Total		**57**

Q4: In your opinion, to what extent has information generated by your IDRC-funded project already led to changes in policy or practice by decision makers? (55 answered; 1 N/A; 1 skipped)

	N/A - This project is not relevant to policy or practice	Negligible or no influence	Indirect, minor influence	Indirect, moderate influence	Indirect, but substantial influence	Direct influence	Total	Average Rating
(no label)	**0.00%** 0	**1.82%** 1	**14.55%** 8	**27.27%** 15	**30.91%** 17	**25.45%** 14	55	3.64

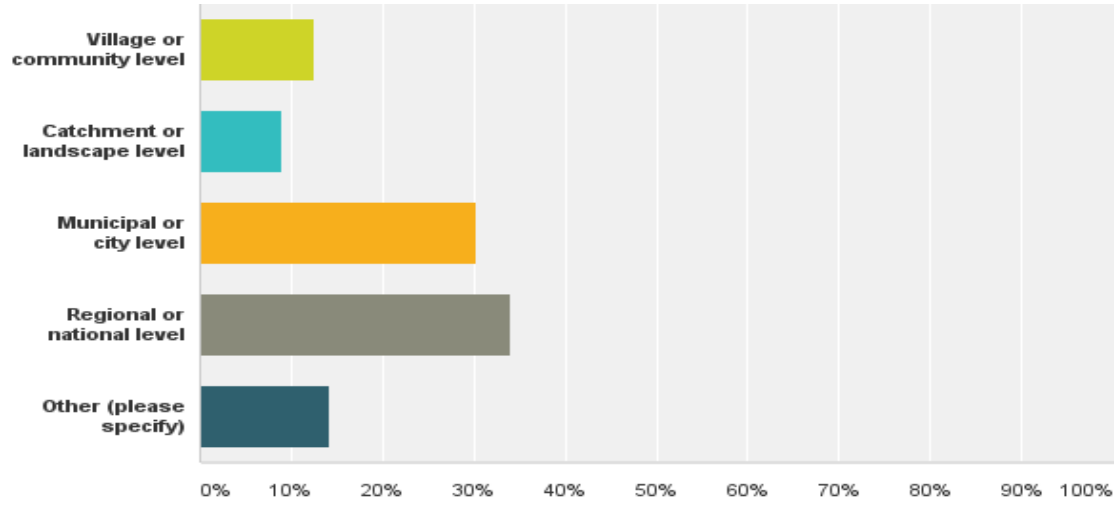
Q5: In your opinion, to what extent will information generated by the project lead to changes in policy or practice by decision makers in the future? (56 answered; 1 N/A)

	Negligible or no influence	Indirect, minor influence	Indirect, moderate influence	Indirect, but substantial influence	Direct influence	Total	Average Rating
(no label)	**0.00%** 0	**1.79%** 1	**16.07%** 9	**35.71%** 20	**46.43%** 26	56	4.27

Q6: Please describe very briefly the single most important change in policy or practice resulting from the project or expected to result from the project in the future. (55 answered; 1 N/A; 1 skipped)

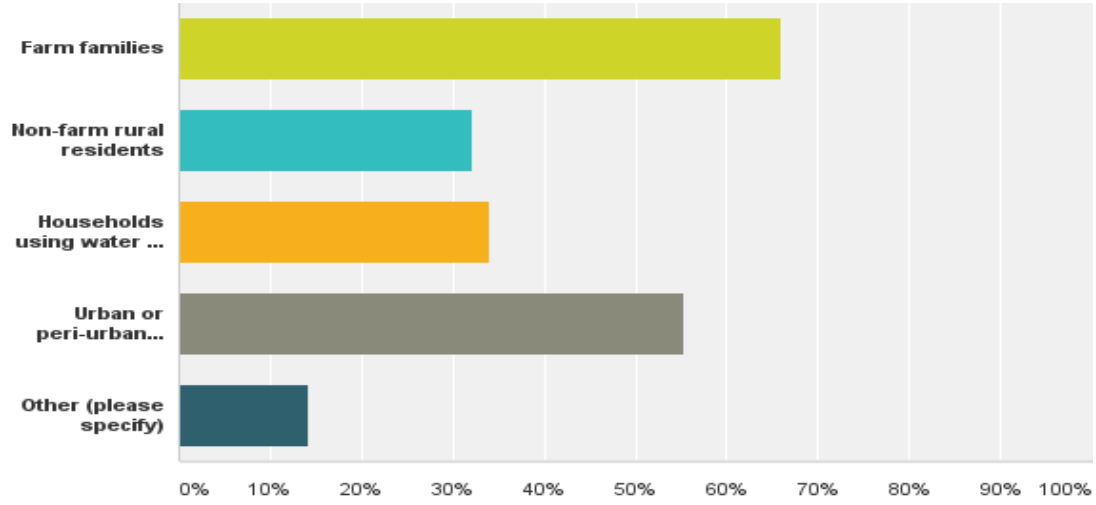
Open-ended responses not included here to guarantee respondent anonymity.

Q7: Continuing with the above example, at what level or scale have or will decision makers change their policy or practice? (56 answered; 1 N/A)



Answer Choices	Responses	
Village or community level	**12.50%**	7
Catchment or landscape level	**8.93%**	5
Municipal or city level	**30.36%**	17
Regional or national level	**33.93%**	19
Other (please specify)	**14.29%**	8
Total		**56**

Q8: Who would you include in the "target population" of people who have/could potentially benefit from the change in policy or practice described above? (Select all that apply) (56 answered; 1 N/A)



Answer Choices	Responses	
Farm families	**66.07%**	37
Non-farm rural residents	**32.14%**	18
Households using water for direct consumption	**33.93%**	19
Urban or peri-urban populations	**55.36%**	31
Other (please specify)	**14.29%**	8
Total Respondents: 56		

Q9: How has/would the change in policy or practice affect or benefit the target group(s)? Please describe briefly.

Open-ended responses not included here to guarantee respondent anonymity.

Q10: What proportion of the main target population has/would be affected by the change in policy or practice? (51 answered; 1 N/A; 5 skipped)

	Negligible proportion	Less than 10%	10-30%	More than 30%	Total	Average Rating
(no label)	**0.00%** 0	**7.84%** 4	**49.02%** 25	**43.14%** 22	51	3.35

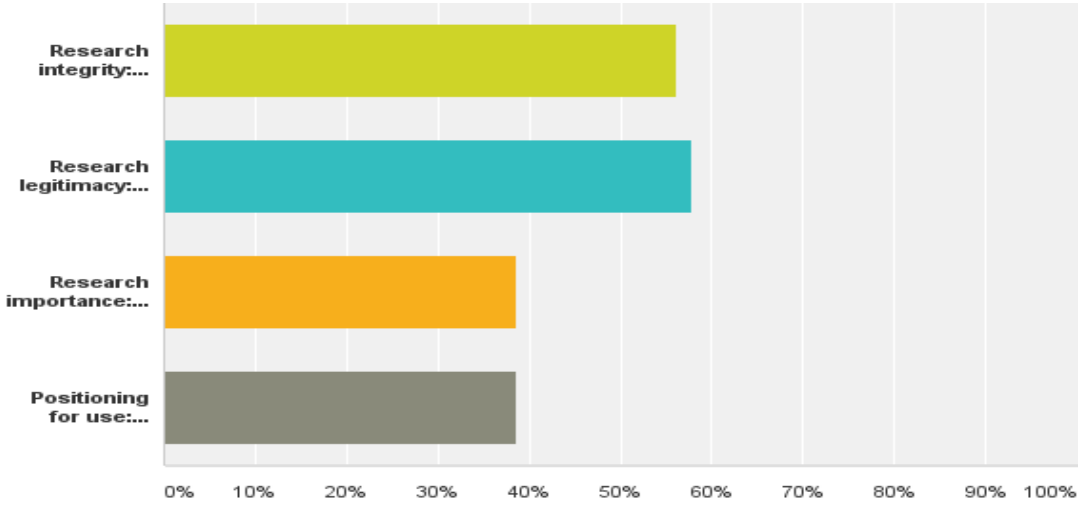
Q11: Over what time period has/would this change have a significant effect on the target population? (53 answered; 1N/A; 3 skipped)

	Between now and the next 3-5 years	Within the next 5-10 years	Within the next 10-20 years	After more than 20 years	Total	Average Rating
(no label)	**54.72%** 29	**32.08%** 17	**7.55%** 4	**5.66%** 3	53	3.36

Q12: What is the size or value of the direct benefit (livelihood improvement) for each individual or community affected by these changes? (53 answered; 1N/A; 3 skipped)

	Negligible	Small	Moderate	Large	Total	Average Rating
(no label)	**0.00%** 0	**7.55%** 4	**62.26%** 33	**30.19%** 16	53	3.23

Q13: The following lists four dimensions of "research quality". Please identify which dimension(s) you feel are most important to include in a definition of research quality (select no more than two). (57 answered)



Answer Choices	Responses
Research integrity: technical quality, appropriateness and rigour of the design and execution of the research	**56.14%** 32
Research legitimacy: addressing potentially negative consequences, gender-responsiveness, inclusiveness, and engagement with local knowledge	**57.89%** 33
Research importance: originality and relevance	**38.60%** 22
Positioning for use: positioning the research for use within a particular user setting or moment in time, i.e. the timeliness and actionability of the research	**38.60%** 22
Total Respondents: 57	